Journal
OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION

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Vol. 133 **October 15, 1958** **No. 8**

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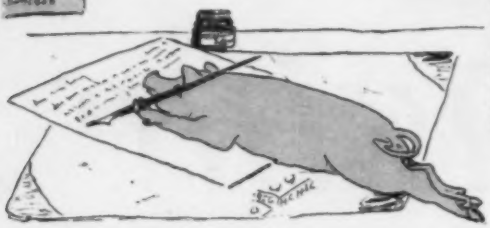
Correspondence

University of Minnesota
College of Veterinary Medicine

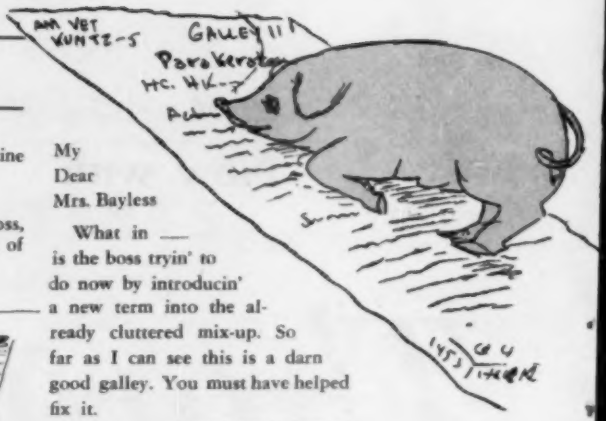
Dear Dr. Bill:

You may recall that my boss, Kernie, reported to the Conference of Research Workers in Animal Diseases last December (1952), that he had observed a skin disease in guys like myself which he designated parakeratosis. Since that time, he has received many inquiries on the subject from gents in the States and in Europe. This stimulated him to prepare the paper I am enclosing to be stuck into one of your publications.



In behalf of the doc, we thank you and your colleagues for all past favors.

s/CHESTER WHITE



My
Dear
Mrs. Bayless

What in —— is the boss tryin' to do now by introducin' a new term into the already cluttered mix-up. So far as I can see this is a darn good galley. You must have helped fix it.

s/CHESTER WHITE

✦ ✦ ✦

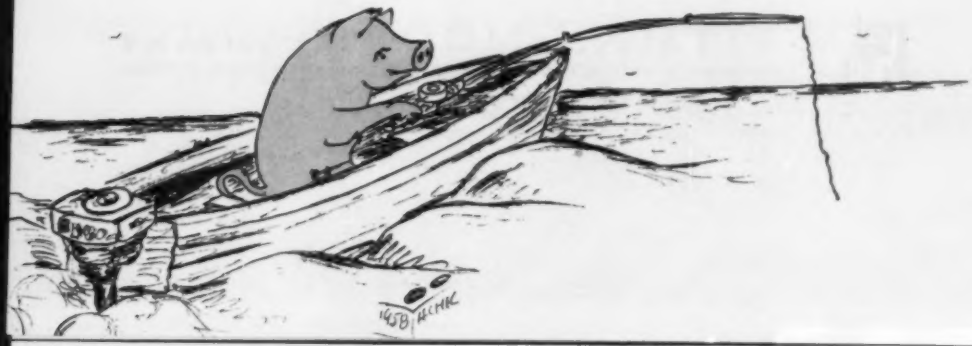
Dear Dr. John:

My boss, Kernie, ast me to tell you that all of us in Minnesota were sorry you didn't make it to the meetin' with his fellow workers to deliberate on health problems of the likes of me. Better come up some time so the boss and me can take you fishin'.

s/CHESTER WHITE

Editor's note.—The illustrated letters on this page are typical of many received over the years from our most unique correspondent—Chester White (H.C.H. Kernkamp).

(Correspondence continued on adv. p. 6)



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Correspondence
—Continued—

August 28, 1958

Dear Dr. Hardenbergh:

Thank you for your letter of August 20.

I am deeply grateful for the action of the Executive Board and the House of Delegates unanimously electing me an honorary member of the American Veterinary Medical Association.

Please convey my sincere thanks to the Association.

Thanks also for your own good wishes. With kind regards.

Sincerely yours,
s/EZRA TAFT BENSON
Secretary of Agriculture
Washington, D. C.

• • •

September 3, 1958

Dear Dr. Hardenbergh:

Your announcement that the AVMA has made me an honorary member of the Association is a special joy to me. I am very grateful for this high distinction and this token of esteem. Will you be

(*Continued, bottom of next column*)

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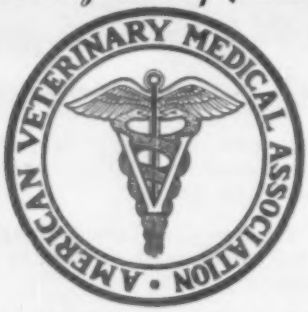

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ORGANIZATION SECTION

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kind enough to give my thanks to the Board, and assure them that I appreciate this great honor. I shall always try to be worthy of it. In this honoring of the President of the German Veterinary Medical Association, I also recognize the establishment of close bonds between both associations.

Thanks again.

s/PROF. DR. (DR. h. c.) MARTIN LERCHE
Berlin, Germany

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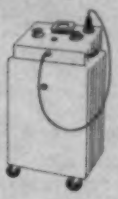

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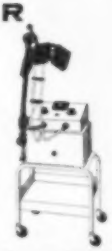

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Washington News

New Public Laws—85th Congress.

85-606—Further amend Civil Defense Act of 1950. Expanding assistance to civil defense, in that it is the policy and intent of the Congress that responsibility for civil defense shall be vested jointly in the federal government and the several states and their political subdivisions. Financial aid authorized under certain conditions.

85-763—Amend Reorganization Plan No. 1 of 1958.*

85-765—Humane Slaughter Methods.* One provision of the law establishes an advisory committee of 12 members, representing eight different categories, to consult with, and assist, the Secretary of Agriculture in developing and determining methods which are humane and practical with reference to slaughtering operations. One must be a representative of a national veterinary organization.

85-766—Supplemental Appropriations, 1959.*

85-777—Extends Title VII, PHS Act, research facilities.*

85-836—Welfare and Pension Plans Disclosure Act.*

85-840—Social Security Amendments of 1958.* Increases benefits under Title II Social Security Act; increases taxable wage base from $4,200 to $4,800 of gross employment earnings, and raises tax rate, in 1959, for employer and employee from 2¼ per cent to 2½ per cent, and for self-employed from 3⅜ per cent to 3¾ per cent. Additional increases are scheduled for 1960, 1963, 1966, and 1969. By 1969, self-employed will pay 6¾ per cent.

85-864—National Defense Education Act of 1958.* Purpose of this act is to provide substantial assistance, in various forms, to individuals and to states and their subdivisions. It is directed mainly toward improved teaching facilities and standards for promising students in science, mathematics, and foreign languages. Several phases of the program concern veterinary medical education, i.e., loans to students, to be handled by the institution; grants to states to help public institutions purchase laboratory and other special science equipment; scholarships to develop college teachers.

85-867—Provide further protection against livestock diseases.* Original bill, H. R. 12126, amended to permit importation of wild ruminants or swine under certain conditions (see JOURNAL, Aug. 15, 1958, adv. p. 12).

85-875—Establishment of science clubs for boys and girls.

85-904—National Farm-City Week.

85-909—Amends Packers and Stockyards Act of 1921.*

85-929—Food Additives Amendment Act of 1958.*

85-934—Science Research Funds. Each agency of the federal government, which is authorized to contract for basic scientific research at non-profit institutions of higher education, may make grants for support of such basic research; also, under certain conditions, title to equipment purchased with such grant or contract funds.

*See JOURNAL, Sept. 15, 1958, adv. p. 12.

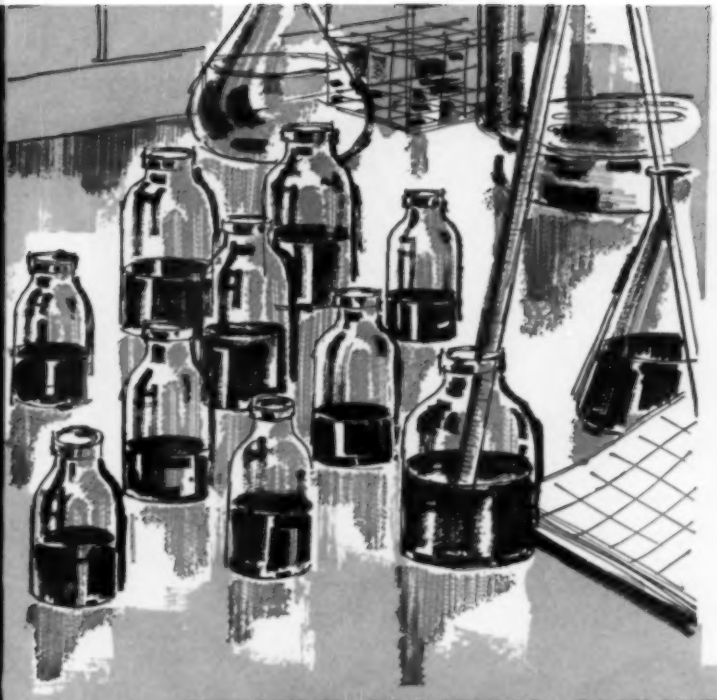
* * *

Other Legislative Items.—A bill to authorize federal grants for construction of research and teaching facilities was not reported out, although the House Interstate Health Subcommittee held extensive hearings (see JOURNAL, May 15, 1958, adv. p. 8).

Pending in Senate Agriculture Committee, at adjournment of Congress, was S.2192, relating to greater protection against diseases of livestock and poultry (see JOURNAL, July 15, 1957, adv. p. 10).

Although a House Agriculture Subcommittee held hearings on a bill (H.R. 5933) to control preparation, distribution, et cetera, of virulent hog cholera virus, it was not reported to the floor.

Correction.—**JOURNAL, Sept. 15, 1958, adv. p. 12, "New Public Laws", 85-606 should read 85-599.**



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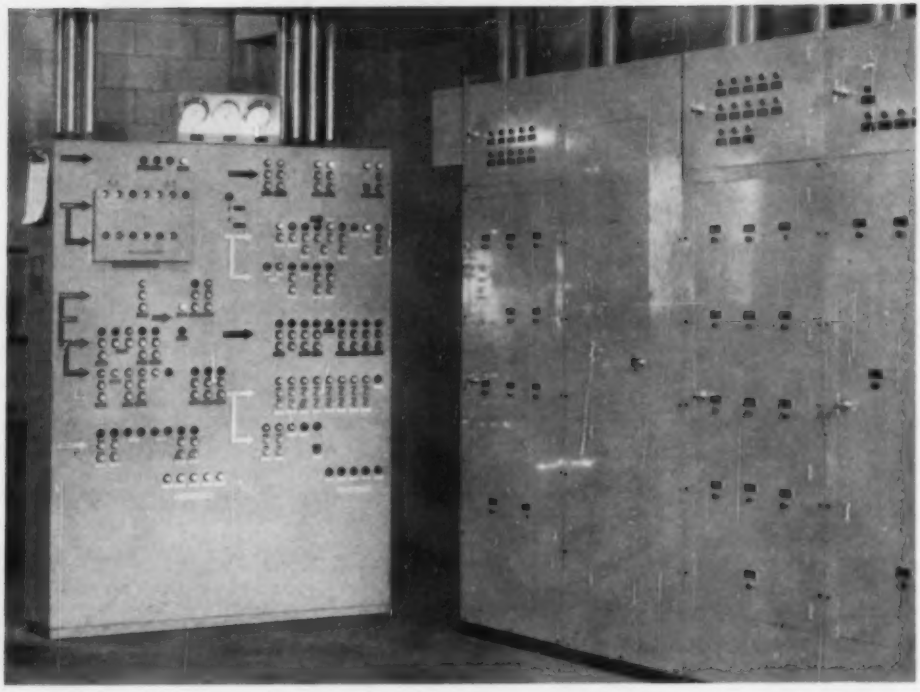

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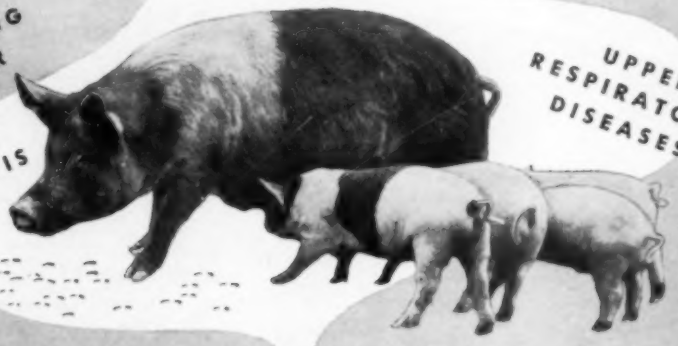

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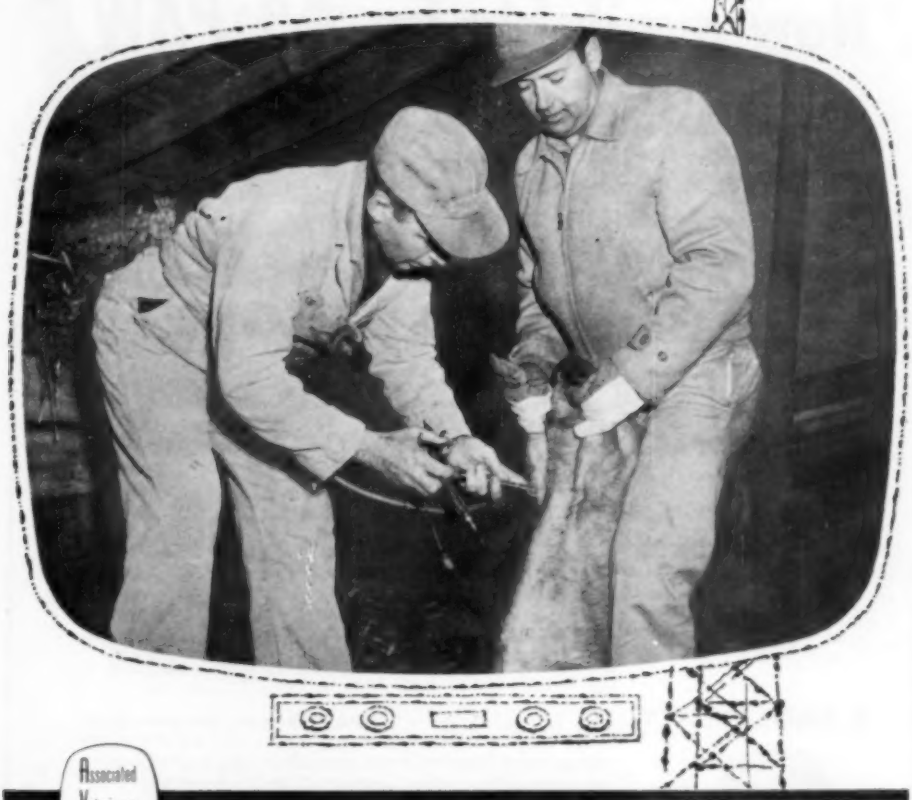

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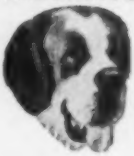

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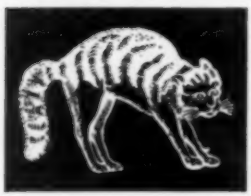

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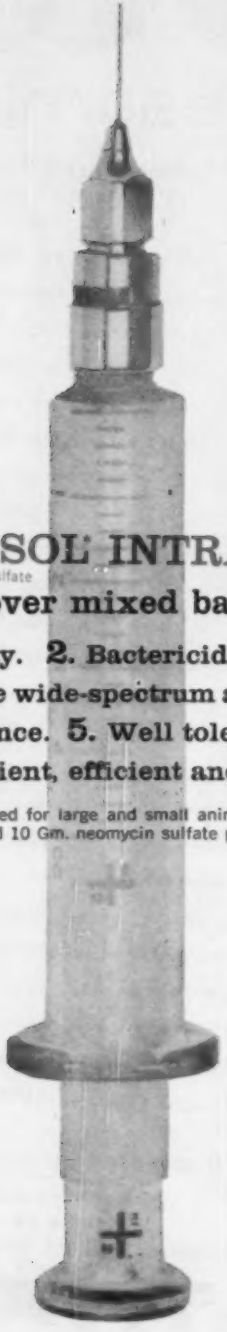

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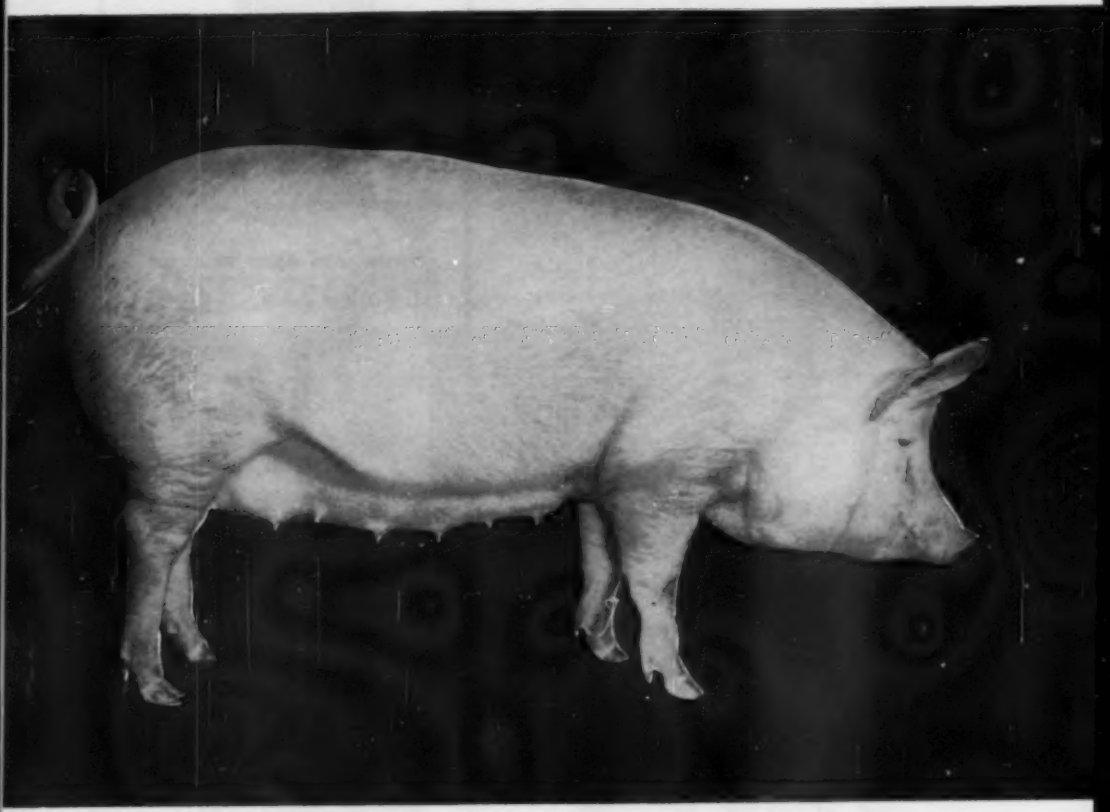

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Some Observations on Hog Cholera and Its Control in the United States

H. W. SCHOENING, V.M.D.

Washington, D.C.

HOG CHOLERA was first definitely recognized in the United States about 1833 and, since that time, has occupied the top position among swine diseases in the country.

DEVELOPMENT OF CONTROLS

Heavy losses due to hog cholera threatened the growing swine industry in the latter part of the nineteenth century, and attention was called to the need for more knowledge to control the ravages of the disease. The recognition for this need by the federal government was partly responsible for the establishment of a Bureau of Animal Industry in the U. S. Department of Agriculture in 1884.[2]

One of the major studies undertaken by the new Bureau was investigation into the cause, transmission, and control of hog cholera. The early workers in this field in the Bureau were Drs. Salmon and Smith and Drs. deSchweinitz and Dorset. Through the work of these investigators and their colleagues, it was determined that the etiological agent of hog cholera was a filterable virus and that a high degree of protection was afforded by the injection of a virulent virus and a potent antiserum given simultaneously.

A vast amount of experimental work in the laboratory and in the field, particularly from 1903 to 1913, resulted in establishing the simultaneous vaccination (virulent virus and potent antiserum) method as an effective and safe procedure when properly used.

During the latter part of this period, attention was given to the control of hog cholera on an experimental basis, in several areas, in cooperation with state livestock sanitary authorities. The program consisted of education, sanitary police measures (quarantine, disinfection, etc.), and vaccination, using serum and virus prepared by the BAI.

By this time, serum and virus were also being produced by some states and by a few commercial biological laboratories and, in some cases, their use in the field gave unsatisfactory results. The need for rigid control of the manufacture and sale of these products became apparent.

In 1913, Congress passed the Virus-Serum-Toxin Act, which gave authority to the Secretary of Agriculture to supervise and regulate the production, sale, and distribution of all veterinary biological products intended for interstate trade. This authority was assigned to the BAI which administered the act first through its several divisions and later through the Division of Virus-Serum Control.

Veterinary biological products in this country, subject to interstate distribution, are prepared by private commercial laboratories operating under a license issued by the U.S.D.A. These private laboratories,

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Dr. Schoening was assistant chief, BAI, 1936 to 1943; chief, pathological division, BAI, 1932 to 1954; assistant chief, Animal Disease and Parasite Research Branch, Agricultural Research Service, U.S.D.A., Beltsville, Md., 1954 to 1955; retired April 30, 1955; consultant, Animal Disease and Parasite Research Branch, 1955 to date.

This article was prepared by the author to appear in a "Festschrift" honoring Prof. Dr. Flückiger, chief federal veterinarian of Switzerland, on his retirement after many years of service on Dec. 31, 1957. The article appeared in German in the Schweizer Archiv für Tierheilkunde, Vol. 99, No. 8, 1957, and the "Festschrift" honoring Professor Flückiger. Translation into the German language was made by Dr. P. Käpelli of Bern, Switzerland. Permission for publication of this article in the Journal of the AVMA has been given by the editors of the Schweizer Archiv and by Dr. Käpelli.

before a license is granted, must have proper facilities and competent personnel and in other ways meet the requirements of the Department.

In addition, each individual product prepared must be licensed. Among the biological products that received special attention were anti-hog cholera serum and hog cholera virus, and regulations governing the production, sale, and distribution of these products were put into effect.

Inspectors of the Bureau were stationed at all establishments licensed to produce hog cholera serums and viruses, and these products were prepared and tested under the direct continuous supervision of these men. Only those products found to meet the potency and safety requirements of the Bureau were released for sale. Unsatisfactory products were condemned and destroyed under Bureau supervision. By 1914, adequate supplies of satisfactory serum and virus became available for use in the field in protecting swine against hog cholera.

The experimental control program was well received and gradually extended to such a point that the demand for the serum and virus was so great that this material was supplied by commercial laboratories entirely.

In order to meet the demands of the program, which had by this time passed the experimental stage, an Office of Hog Cholera Control was established in the BAI, later becoming the Division of Hog Cholera Control. Programs of control were eventually started in practically all of the states, depending on the incidence of the disease and the veterinary services available.

This work was carried out in cooperation with state livestock sanitary authorities, practicing veterinarians, farm leaders, and swine producers. As well-organized livestock sanitary services in the various states developed, the control programs were gradually left to a great extent in their hands.

While hog cholera is no longer the threat to the swine industry that it was in former years, the disease is always present, with sporadic outbreaks every year in some parts of the country. An estimate of the average annual loss from hog cholera, from 1942 to 1951, has been placed at $50 million.*

*The number of swine of all ages on farms in the United States in 1955 was more than 55 million.

SIMULTANEOUS METHOD OF VACCINATION

While the results of the simultaneous method of vaccination (serum and virus) were usually quite satisfactory, there were shortcomings in the method. These consisted of so-called "breaks" in vaccination, which meant that pigs developed hog cholera after vaccination. Two types of breaks were recognized—an "early break," wherein pigs became sick and died of hog cholera in approximately seven to ten days after vaccination, and "late breaks," where pigs died several months after vaccination.

The early break losses following vaccination would point, theoretically, to an impotent serum used with a virulent virus. However, since all serums used were prepared under the supervision of the BAI and had passed rigorous potency and safety tests, the cause of these reactions needed to be explained on another basis.

Losses due to late breaks (some months after vaccination) were considered due to the pigs' failure to develop immunity or to loss of their immunity, so that when they were exposed to the virus under field conditions, they contracted the disease.

Failure to establish active immunity in pigs could also occur as a result of using virus which had lost its virulence. The Bureau requirements were that the virus be kept at a low temperature and that it be used within 90 days after preparation.

The most troublesome of these problems was the early break, or the development of hog cholera usually about seven to ten days after vaccination. This occurred in healthy swine in good condition as well as in unthrifty hogs. These early breaks had occurred for years, although the incidence prior to 1949 was comparatively low. Nevertheless, they were a matter of concern and intensive investigations over the years failed to give a satisfactory explanation as to the cause. Not until 1949 was a logical reason for these early break losses found.

In the spring of 1949 and again in 1950, heavy losses occurred in swine, in the principal swine-raising centers of the country, six to ten days after vaccination with serum and virus. The Pathological Division of the BAI made an extensive investigation in the laboratory and in the field in both years.[1] More than 2,000 swine were used in these experimental investigations.

It was shown that the losses were, for the most part, due to the use of a commercial hog cholera virus which had developed immunologically variant characteristics against which the serum, in the quantities used, afforded only partial protection. As a result, many pigs thus vaccinated became sick and died of hog cholera. An epizootic of hog cholera was thus set up by vaccination, which caused heavy losses in the years 1949 and 1950.

Several limited investigations in earlier years had failed to show that there was more than one immunological virus type. That the viruses causing trouble in 1949 and 1950 were immunological variants of a type, and not a new immunological type, was shown by the fact that immune pigs were resistant to challenge with this virus, whereas nonimmune pigs died of typical hog cholera.

The disadvantages of the serum and virulent virus method of vaccination (particularly in view of the early breaks) had been recognized for many years. Indeed, these disadvantages were reported by Dr. Dorset, the discoverer of the method. For many years, he carried out experimental work in an effort to perfect a vaccine which would eliminate the use of virulent virus. It was through his work and that of his co-workers that the killed virus vaccine—crystal violet—was developed. This product has been used not only in this country, but also in many other countries of the world, with good success. Other methods of preparing vaccines were also studied.

MODIFIED VIRUS VACCINE

Following World War II, considerable experimentation was undertaken by commercial laboratories preparing veterinary biological products in an effort to modify the virus of hog cholera by adapting it to the rabbit. This was successful and the adapted rabbit virus proved to be avirulent, or of low virulence, for swine.

Vaccines prepared from the adapted rabbit virus gave good protection against virulent hog cholera virus. Some of these vaccines were prepared to be used with or without antiserum, whereas others were to be used only with serum. In addition, vaccines were also prepared from hog cholera virus modified by adaptation to tissue culture.

After careful evaluation of all data, accumulated over a period of time from extensive laboratory and field tests, temporary licenses were issued by the BAI to a number of commercial biological establishments to prepare and sell modified hog cholera vaccines in order to gather further information on the efficacy of the vaccines in large-scale field use.

The reports on the extended use of the vaccines in the field were generally favorable and regular licenses were then issued, since it was considered that the vaccines were past the experimental stage. These products have been favorably received and have had extensive use, in various parts of the country, in the immunization of swine against hog cholera.

While the results following the use of the modified live virus vaccines have been satisfactory, in general, unfavorable reactions have occasionally been reported. These have been in the nature of sickness and death soon after vaccination, or failure to develop immunity. The cause of these unfavorable reactions is receiving continued study, and definite conclusions as to their cause must await further studies.

At the present time, there are 29 commercial biological establishments licensed by the U.S.D.A. to prepare virulent hog cholera virus and anti-hog cholera serum. Of these, 25 are also licensed to prepare modified hog cholera vaccines of one type or another.

It is of interest that, since the introduction of the modified live virus vaccines, in 1951, there has been a steady increase in their use and a corresponding decrease in the use of virulent virus and antiserum. For example, in the year 1956, 71 per cent of all the methods of vaccination used were of the modified live virus type, as against 24 per cent of the virulent virus and antiserum type and 5 per cent of the inactivated vaccine type (crystal violet, etc.)

DISCUSSION

Because of the disadvantages of the serum and virulent virus method of vaccination, it has been the opinion of many that further progress in the control and eventual eradication of hog cholera could not be accomplished while virulent virus was used in mass vaccination. With the advent of the new modified vaccines and their availability, livestock sanitarians, swine producers, and others considered the time ripe to give serious thought to better methods of control of hog cholera and to the ques-

tion of eradication of the disease from the country.

In 1951, a national committee on Eradication of Hog Cholera was established by the U.S. Livestock Sanitary Association[3] to study the control and eventual eradication of hog cholera in the United States. The personnel of the committee included federal and state officials, practicing veterinarians, research workers, swine producers, and others.

The first report of the Committee (Nov., 1951) stated, in part, "at the onset your Committee wishes to emphasize it believes eradication of hog cholera is possible but not so long as mass production and field use of hog cholera virus (virulent) is permitted." Among other recommendations, the need for the sterilization of garbage fed to swine was stressed.

The committee has continued to make yearly reports of an advisory nature pertinent to the subject, and its recommendations are being continually reviewed by regulatory officials. For example, several of the states have now prohibited the use of virulent hog cholera virus in their control programs and these states have reported a drop in incidence of hog cholera.

Another step forward is the requirement, now in effect in 46 states, that garbage fed to swine must be cooked. This action by the states was largely the result of the campaign to eradicate vesicular exanthema.

At the committee's recommendation, a pilot test area has been established in two counties in the State of Florida, where problems incident to the eradication of hog cholera in a specific area are being studied by federal and state authorities.

Continued studies of the modified vaccines and their use in the field are being carried out in federal, state, and commercial establishments, and research on hog cholera, in general, is receiving much needed attention. With the gradual elimination of the use of virulent hog cholera virus, replaced by modified and inactive vaccines, the control of hog cholera in the United States is now being approached with new weapons and new ideas.

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Swine Lungworm as a Reservoir for Hog Cholera Virus

It was previously reported that hog cholera virus is usually present in lungworms derived from eggs passed by swine with hog cholera and that the virus seemed to be in a "masked," nonpathogenic, and nonimmunogenic form, which could be provoked to pathogenicity in swine by the reaction caused by migrating ascaris larvae (*J. Exptl. Med.*, 1958: 107-609.)

In the present experiment, involving only the lungworm, 4 of 71 lungworm-free swine (5.6%) developed fever, the first sign of cholera, three to six days after being injected intramuscularly with a suspension of pulverized adult lungworms which had been recovered from a cholera-free pig, but which were derived from the ova passed by a pig ill with hog cholera. In a similar experiment, except that the injected swine were infected with lungworms, 23 of 365 (6.3%) developed the fever of hog cholera in two to seven days. This indicated that the cholera virus could survive in lungworms developed from ova from cholera-infected swine without infecting the host swine; also that under certain conditions, the virus may become pathogenic for susceptible swine.

When swine which had not developed cholera, after being injected with suspension of lungworms of cholera origin, were fed earthworms containing lungworm larvae of cholera origin, 7 of 53 (13%) developed the fever of hog cholera in two to 12 days. A total of 56 cases of hog cholera was induced in experiments conducted in every month in a period of over two years. Of these, 52 (93%) occurred from January to May, and 4 in October to December. These findings indicate that the masked hog cholera virus may have been activated by factors involved in seasonal conditions, or in multiple parasite infections, or in both. —*R. E. Shope in J. Exptl. Med. (July 1, 1958): 159-169.*

• • •

If Shope's conclusions are correct it is difficult to explain how swine fever has been eradicated from such countries as Australia, why the incidence is so low in Canada, and why the incidence in Great Britain fell away to practically nothing during the second world war and the immediate post-war period when imports of bacon were so severely restricted.—*Vet. Bull. (Aug., 1958): 437.*

Hog Cholera in England

Since 1938, when the Animal Health a notifiable disease in Great Britain in 1879 and was dealt with by local authorities. In 1893, the government assumed the responsibility for control and attempted it by slaughter of infected herds and by area restrictions. In 1915, that policy was superseded by one of isolating infected herds until clinical evidence of the disease had disappeared. The reasons for this change were: (1) the incidence of the disease had steadily increased, nearly tripling in five years (4,356 herds affected in 1914), and (2) anti-hog cholera serum had become available.

Since 1938, when the Animal Health Division was created in its present form, the prevalence of hog cholera has been reduced from a high of 5,019 herds affected in 1940 to only five herds in 1949, with a second high of 2,713 herds in 1953 and a drop to 741 herds in 1956. The reduced importation of raw pork products from countries where cholera is prevalent has been a major factor in controlling the disease.

The licensing for sale of apparently healthy hogs in infected herds, many of which are doubtless in the incubative stage, is recognized as an internal source of infection in the country. (The virus was found active in pork refrigerated at 12 F. for over four years). The movement of swine through public markets is credited with 50 per cent of the spread of the disease in Great Britain. As the result of the sale of one lot of infected pigs, the disease was traced to 30 herds in ten counties. Undoubtedly, most of the initial infections had come from "swill" with subsequent spread by movement of infected pigs.

Under the present control policy, when a veterinarian suspects cholera, he immediately reports to the local police who start control procedures and notify, by telegram, the local and head offices of the Ministry of Agriculture, Fisheries and Food. The police serve a notice defining the infected premises and the rules which must be observed. The veterinarian, on entering the infected premises, must confirm the particulars on this notice. These restrictions remain until withdrawn by the head office of the Ministry. If the diagnosis is confirmed, a full-time officer of the Ministry takes charge and endeavors to trace the origin of the infection; also all animals or persons who may have come in contact with the disease. Restrictions are placed on the general movement of pigs and the holding of sales in the area.

The use of crystal violet vaccine has done much to control the disease. Field trials were conducted, in 1954 to 1957 in disease-free herds, with a lapinized virus produced at Weybridge Laboratory. It was concluded that this vaccine not be recommended for general use since the injected pig may spread the attenuated virus by contact and the infection may produce lesions indistinguishable from the natural disease.—*A. J. Wilsdon in Vet. Rec. (Jan. 4, 1958) : 3.*

Using Lapinized Hog Cholera Virus

The results of vaccination with a lapinized hog cholera virus vaccine were investigated. The postvaccination reaction generally appeared on the sixth or seventh day, occasionally on the third to fifth day. It included fever, leukopenia, and often general depression, diarrhea, and other disturbances. Reactions were most marked in swine suspected of having other latent infections. Under some conditions, the reactions were observed in 30 per cent of the vaccinated pigs.

Postvaccination reactions were reduced to about 2 per cent, without interfering with the production of immunity, when 15 cc. of anti-hog cholera serum was given simultaneously. A high degree of immunity developed in eight days and lasted at least six months. The vaccinated pigs excreted the virus, which produced a partial immunity in some unvaccinated contact pigs.—*H. Janowski et al. in Med. Wtryn. (March, 1958): 129.*

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That lapinized hog cholera virus vaccine is spread by susceptible pigs into which it is injected is indicated by evidence of immunity in about 45 per cent of other susceptible pigs placed with the vaccinated pigs.

When anti-hog cholera serum was given with the vaccine, it did not interfere with the development of immunity in the pigs but did seem to prevent them from eliminating the virus since none of the nonvaccinated contact pigs showed evidence of immunity.

Because of its strong and lasting immunity, the author favors the use of lapinized virus vaccine over the inactivated vaccines,

in Romania.—*A. Mihaita et al. in Yearbook, Pasteur Serum and Vac. Inst., Bucharest, vol. 2, (1957): 138.*

Using Crystal Violet Vaccine.—Hog cholera was a serious problem in a district in Germany, in 1953, with 497 farms affected. Since the introduction of crystal violet vaccine, in 1953, the situation has improved, with only 17 farms affected in the first half of 1957. In the four years, 166,000 sows and suckling pigs were vaccinated, with a postvaccination loss of 0.34 per cent, most of which was due to bronchopneumonia.

The postvaccination response to crystal violet vaccine was investigated. Following a single large injection of 10 cc., almost all of the pigs developed a fever (time not given) of up to 41 C. (105.8 F.) but without influencing their gain in weight. Large swellings often developed at the point of injection but disappeared in ten to 14 days. These were attributed to the effect of crystal violet and glycerin and varied with the commercial preparations. Intraperitoneal injection often resulted in a strong, local hemorrhagic lesion.

The dye may also affect the more sensitive cells in the reticuloendothelial system. These irritations may influence the inflammatory changes in the lung by causing a restlessness of the pig. These minor ill effects probably can be avoided by use of more chemically pure commercial preparations.—*H. Kruger in Monatsh. f. Vet.-med. (June 15, 1958): 356.*

Atypical Hog Cholera Confused with Transmissible Gastroenteritis in Germany.—Since 1953, epizootics in swine of all ages have occurred in northwestern Germany. The predominant disease was diagnosed as transmissible gastroenteritis and was characterized by vomiting and diarrhea with a high mortality in young pigs only. Survivors seemed to develop a permanent immunity. By 1956 and 1957, this disease was seen only occasionally. Another somewhat similar disease, considered to be an atypical infectious gastroenteritis, was first studied in the same region, in 1954. However, cross immunity tests have proved it to be a different entity.

The second disease proved to be an atypical hog cholera (*schweinepest*) which differed from typical cholera by its long incubation period (3 to 5 weeks), a lower mortality, and a complete or partial lack of the typical cholera lesions. Studies are incomplete, but the causative virus seems to have been modified by unknown influences. The survivors are immune to virulent hog cholera virus. The incidence of this disease has increased in recent years but it rarely can be clinically diagnosed as cholera. Pigs that have shown typical signs of cholera often have survived.—*K. Wagener and H. Glasser, Jr., in Berl. u. Münch. tierärztl. Wchnschr. (Nov. 15, 1957): 465.*

Comments on Agricultural Economics

Production of cattle, swine, sheep, and poultry is a vital function of our agriculture, which is indispensable to the total economy. The farmers of the United States are the most efficient in the world. These 20 million people, less than 1 per cent of the world's population, produce between two-fifths and one-half of the world's production of red meat, milk, and eggs, making it possible for the American consumer to have the best diet in the world and yet to spend a smaller percentage of his income for food than in most other countries.

The income per person of the farm population rose 10 per cent last year over 1956 and was 2 per cent higher than the previous record in 1951. The standard of living on farms is higher today than ever before and farm assets are at an all-time high—$188 billion as of Jan. 1, 1958. Improvement in livestock prices continued into 1958. The increased interests in vertical integration indicates that this development may have greater significance in the future. Contractual integration is not new; it has characterized fruit, vegetable, and dairy industries for a long time. The thing that is new is the degree of interest, the extent of integration of production, processing, and marketing, and the extension of such relationships into the poultry and meat-animal enterprises.

We can build a healthier farm economy but we can do so only if agriculture is kept dynamic and free. We need not go on endlessly repeating the lessons we have already learned. Farming can not be successfully run from Washington.—*Ezra Taft Benson from Nat. Inst. of Anim. Agric., Purdue Univ., Lafayette, Ind., April 21, 1958.*

Caries in Twins.—A study of the occurrence of caries in twins indicates that there is a hereditary factor in susceptibility to caries.—*Science (Aug. 8, 1958): 300.*

More AVMA Convention Highlights

A total of 3,614 individuals registered their attendance for the Ninety-Fifth Annual Meeting (Aug. 18-21, 1958) in Philadelphia, Pa.

Official Registration Figures

Veterinarians	1,889	52.2%
Women	763	21.2%
Exhibitor representatives	424	11.7%
Children	341	9.4%
Students	107	3.0%
Non-veterinarians	90	2.5%
Total	3,614	100.0%

The five states with the highest number of registrants were: Pennsylvania, 720; New York, 291; New Jersey, 248; Maryland, 198; Ohio, 184.

Geographic Distribution of Registrants at the Philadelphia Meeting
August 18-21, 1958

Alabama	36	New Hampshire	5
Arizona	6	New Jersey	248
Arkansas	11	New Mexico	7
California	84	New York	291
Colorado	32	North Carolina	41
Connecticut	52	North Dakota	6
Delaware	43	Ohio	184
District of Columbia	69	Oklahoma	28
Florida	29	Oregon	11
Georgia	41	Pennsylvania	720
Idaho	3	Rhode Island	9
Illinois	179	South Carolina	12
Indiana	142	South Dakota	24
Iowa	116	Tennessee	17
Kansas	57	Texas	55
Kentucky	33	Utah	8
Louisiana	9	Vermont	12
Maine	19	Virginia	135
Maryland	198	Washington	22
Massachusetts	86	West Virginia	18
Michigan	112	Wisconsin	59
Minnesota	73	Wyoming	8
Mississippi	3	U.S. Possessions	23
Missouri	106	Canada	66
Montana	8	Foreign	35
Nebraska	20	Grand Total	3,614
Nevada	3		

Awards Presented at the Philadelphia Meeting

Citation—1958 AVMA Award

James A. McCallam (Brig. Gen. Ret.)

James A. McCallam (Brig. Gen., VC-U.S. Army, Ret.) was born May 13, 1894, in Philadelphia where he graduated from high school and then entered the School of Veterinary Medicine, University of Pennsylvania, from which he received his V.M.D. degree in 1917.

General James McCallam (left) receives the 1958 AVMA Award from President Armistead.

He was appointed second lieutenant in the Regular Army Veterinary Corps in July, 1917, and during World War I, had duty at Camp Stewart, Texas, Camp Courchesne, New Mexico, Camp Greenleaf, Georgia, Ft. Ringgold, Texas, with the

The Preconvention Conference on Public Relations was held on Sunday, August 17, in the Sheraton Hotel, Philadelphia.

12th Cavalry at Columbus, New Mexico, and was stationed for a time in Chicago for instruction in meat inspection.

A graduate of the Army Veterinary School in 1924, and an honor graduate of the Medical Field Service School in the same year, he served through the various grades, being promoted to colonel, Regular Army, in 1943. He served as division veterinarian in Hawaii; headquarters veterinarian, Central Remount Zone; instructor and officer in charge, Medical Department Reserve, Kansas City; instructor at the Engineer School, Fort Belvoir; at the Field Artillery School, Fort Sill; 8th Corps Area Veterinarian and veterinarian at Sixth Army Headquarters.

During World War II, Colonel McCallam served overseas with the Sixth Army in Australia, New Guinea, Leyte, and Luzon in the Philippines and finally with the occupation forces in Japan, from where he was recalled to be appointed director of the Veterinary Division, Office of the Surgeon General, succeeding the late Brig. Gen. R. A. Kelser in December, 1945. In March, 1946, he was awarded the Legion of Merit Medal and the Bronze Star Medal. He was promoted to the grade of brigadier general on Jan. 24, 1948.

With his retirement in 1953, General McCallam brought to a close a period of service that spanned almost the entire time the Veterinary Corps had been in existence. His record of membership in, and service to, the American Veterinary Medical Association is as distinguished as his military record. He joined the AVMA in 1918, was elected first vice-president for 1948-1949. He was a member of the House of Representatives as delegate of the Army Veterinary Corps and an associate editor of the JOURNAL. In 1952, he was elected president-elect and served as president in 1953-1954.

Since his retirement, General McCallam has been the Association's Washington representative, an assignment for which he is especially qualified because of his years of experience with top echelons of government and acquaintance with officials and members of Congress. His broad grasp and sound judgment on professional problems have been of great value in promoting the best interests of the Association. He has applied himself most diligently and has worked long hours; the results of his efforts have been repeatedly demonstrated in Washington, not only on legislative matters but in his contacts with various governmental agencies.

Citation—12th I.V.C. Prize—1958

Dr. Harry W. Schoening

Dr. Harry W. Schoening was born in Philadelphia, Pa., on Oct. 8, 1886, received his V.M.D. from the University of Pennsylvania in 1907, and entered government service that same year with the Meat Inspection Division in Chicago.

In 1913, he joined the Pathological Division, Bureau of Animal Industry, in Washington, where he remained in continuous service until retirement in 1955. During this period, he was chief of the Pathological Division from 1932 to 1954 and assistant chief of the BAI from 1936 to 1943. At the time of his retirement, Dr. Schoening was assistant chief of the newly organized Animal Disease and Parasite Research Division, Agricultural Research Service, U.S.D.A.

Soon recognized as a research scientist, Dr. Schoening was a member of the first U.S.D.A. Foot-and-Mouth Disease Commission and spent a year in Europe where, in 1925-1926, he joined other authorities in developing a vaccine for the

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The luncheon session of the Preconvention Conference on Public Relations was held on Sunday, August 17, in the Sheraton Hotel.
Mr. Joseph Kraus, coordinator of National Science Fairs, Washington, D.C., was the speaker.

disease. He represented the U.S. on a subcommittee on animal health of FAO, United Nations, at meetings in London in 1946 and Washington in 1947. He was chairman of the U.S. delegation to a foot-and-mouth disease conference in Paris in 1950 and attended other international meetings on the production and standardization of the vaccine, control of the disease, and other aspects. In addition to his research investigations on foot-and-mouth disease, Dr. Schoening worked on equine diseases and, through his investigations and those of other members of the Pathological Division, dourine and glanders were brought under control.

His nearly 50 years of research also covered such diseases as vesicular stomatitis, encephalomyelitis, swine erysipelas, hog cholera, and rabies, the latter being of main interest to him. His work on rabies and active participation in national and international conferences on its control contributed greatly to the development of effective vaccines which have reduced the menace of the disease to the animal and human populations.

Among his other services as a member of the veterinary profession, Dr. Schoening was a member of the National Advisory Health Council, U.S.P.H.S., from 1945 to 1950; president of the Conference of Research Workers in Animal Diseases in 1944; president of the District of Columbia V.M.A. in 1939. During World War I, he served in the Army Veterinary Corps and in World War II as a member of the ABC and DCF Commission on Biological Warfare. During this period, he was a member of the Joint Canadian-American Commission on wartime research and of the American Commission which organized and supervised research on poultry diseases at Harvard University.

President Armistead presents the Twelfth International Veterinary Congress Prize to Dr. H. W. Schoening (right).

Dr. Schoening is a member of many professional and scientific organizations including the AVMA (joined 1912), Society of American Bacteriologists, Academy of Medicine, and Washington Academy of Scientists, National Association of Federal Veterinarians, Scientific Advisory Committee of the Grayson Foundation, A.A.A.S., and Sigma Xi.

He is author and co-author of over 100 scientific papers in the fields of veterinary bacteriology, virology, and is co-author of the fourth and fifth editions of the "Manual of Veterinary Bacteriology" by Kelser and Schoening.

Citation—1958 Borden Award

Dr. Chester A. Manthei

Dr. Chester A. Manthei was born in Rock County, Wisconsin, on November 4, 1909. He received his D.V.M. at Michigan State University in 1935, practiced for two years, and then entered government service with the Bureau of Animal Industry where he started on research work on bovine brucellosis, including control of diagnostic antigen, preparation of Brucella strain 19 vaccine, evaluating other vaccines, and testing commercial Brucella vaccines.

Dr. C. A. Manthei (right) accepts the Borden Award, presented by Mr. John McCain of the Borden Company.

Through his understanding of the problems common to bovine and porcine brucellosis, Dr. Manthei initiated, planned, coordinated, and interpreted research programs on the degree and route of exposure of a highly pathogenic strain of *Brucella abortus*. The information obtained helped research workers throughout the world to evaluate different types of vaccines and his work on strain 19 vaccine has been an important factor in the control and eradication of brucellosis in the United States on an area basis.

As a recognized authority on brucellosis research

and control, his advice has been sought and given on brucellosis problems to many countries and industries. His knowledge of research application to field use, and of the relationships of virology, immunology, serology, physiology, clinical medicine and related sciences has made his services sought in other areas in the Department of Agriculture, by national and state health agencies and other circles, both national and international. Dr. Manthei has actively participated in the work and programs of the National Brucellosis Committee, the FAO/WHO Expert Committee on Brucellosis, Pan American Veterinary Congress, the FAO Committee on Vibriosis of Cattle, and others.

Dr. Manthei has been the author or co-author of more than 35 articles covering the field of brucellosis research and control, which have appeared in veterinary medical journals, bulletins, circulars, dairy, and other publications. He is a member of the AVMA, has served in its House of Delegates; and of the U.S. Livestock Sanitary Association and its committees on bovine and porcine brucellosis.

Citation—1958 Gaines Award

Dr. Frank Kral

Dr. Frank Kral was born in Albrechtice, Czechoslovakia, August 18, 1892. He attended the Veterinary College in Vienna, Austria, and the School of Medicine in Brno, Czechoslovakia, and received his M.V.D. degree from Vienna in 1914. He received the honorary degree of V.M.D. from the University in Sophia, Bulgaria, in 1939.

From 1920 to 1948, Dr. Kral taught at the veterinary school and medical school at the University of Brno, Czechoslovakia, and was elected dean of the veterinary school there in 1932. While teaching, he wrote and published three textbooks: "Clinical Diagnosis" in 1927; "Veterinary Dermatology" in 1931, and "Colics in Horses" in 1941, and over 150 papers on various subjects.

In February, 1949, Dr. Kral came to the United States and was appointed associate in veterinary medicine at the School of Veterinary Medicine, University of Pennsylvania. He was soon made assistant professor, then associate professor in 1950, and professor in 1956. Since 1952, he has also been a part-time lecturer in the Graduate School of Medicine at the University.

He is a recognized authority in animal dermatology, has given innumerable lectures on the subject in all parts of the country, has unselfishly shared his knowledge with veterinarians everywhere and has stimulated them in the improvement of diagnosis and treatment of dermatological conditions in both small and large animals. His ever-willing participation in conference, short course, and other scientific programs and clinics has brought him great respect and liking of professional colleagues everywhere.

The AVMA-sponsored dinner for student chapter and auxiliary delegates was held on Sunday night, August 18, in the Sheraton Hotel, Philadelphia.

Dr. Frank Kral (left) receives the Gaines Award from Mr. Harry Miller of the Gaines Research Center.

Dr. Kral is a member of the AVMA; the Keystone (Philadelphia) and Pennsylvania State V.M.A.s; the New York Academy of Science; honorary membership in Alpha Psi and Alumni Society, University of Pennsylvania; he is also a member of Phi Zeta and the Rotary Club of Philadelphia.

1958 Humane Act Award

The 1958 winner of the American Veterinary Medical Association Humane Act Award, Grace Elizabeth Fainelli, 14, of 1229 Pleasant Ave., Schenectady, N. Y., was selected by the Committee for her outstanding record in the humane treatment of lost, strayed, abandoned, and orphaned animals thoughout the year.

Among her many actions on behalf of animals was the adoption of a cat, abandoned and injured at a summer camp when it closed for the summer. Grace took it home, nursed it back to health, and found a good home for it.

In another instance, she saved a deodorized skunk from being shot when her neighbor found it in his garage. Grace again sheltered it until she could find it a good home.

Grace represents a one-girl animal shelter, typifying the best in man's relations with his animal friends. Miss Fainelli received the Association's official national citation and a $100 U.S. Savings Bond in recognition of her humane actions.

Special certificates in recognition of other outstanding acts of kindness toward animals were awarded by the AVMA to: Beth Hoffman, Woodland, Calif.; James Peltier, Grand Blanc, Mich.; John Miniarch, Five-Points, Pa.; Billy Mick, Gunnison, Colo.; Judy White, Dubuque, Iowa; Tommy Stanton, Washington, D.C.; Garry Rebec-

The family party, which the local committee of the Philadelphia AVMA Convention gave for the officers, Executive Board, House of Delegates, AVMA staff, and their wives, was held in the rotunda of the University of Pennsylvania Museum on the University campus.

Dr. C. E. DeCamp (left), of the New York State V.M.A., accepts the Humane Act Award for Elizabeth Grace Fainelli (inset) of Schenectady, N.Y., from Dr. C. W. Bower of Topeka, Kan.
The award was presented in turn to Miss Fainelli at the New York V.M.A. annual meeting in September.

ca, Glencoe, Ohio; Sidney Helen Connelly, Littleton, Colo.; Robert Brucker, Sharpsburgh, Pa.; Nita Von Ratlev, Madera, Calif.; Robert Bruno, Long Island, N.Y.; Joseph Sokoloski, Hazelton, Pa.

Reports of the Group Conferences Held During the Philadelphia Meeting

Conference of Editors

Approximately 50 persons attended the editors' meeting held on Monday evening, Aug. 18, 1958, at the Sheraton Hotel.

Walter Kahoe, director of the J. B. Lippincott Co. Medical Department, and executive editor of six medical journals, described some of the problems confronting a medical editor. In describing his policy of permitting authors to use their own words and style as much as possible, he made the amusing allusion that authors often feel toward manuscripts as a cow toward her calf—resentful of anything done to it, whether good or bad.

Dr. Wayne Riser, AVMA editor for small animal medicine, discussed the problem of manuscripts written in a testimonial manner about therapeutic agents and proposed that editors require authors to report both favorable and unfavorable findings, use a significant number of animals in evaluation experiments, and compare new drugs with older or better established drugs. He commented that some manuscripts are little more than glorified testimonials often prepared with the help of the producer of the drug involved.

Mrs. Helen S. Bayless, AVMA advertising manager and assistant editor in charge of production,

The editors' conference was held on Monday evening, August 18, during the AVMA Convention in Philadelphia.

reported on the production of an experimental issue of the JOURNAL of the AVMA on heavier (60-lb.) paper with better ink. The conferees, who were asked to examine and compare the results insofar as reproductions were concerned, agreed that improvement had been attained. She also pointed out the various factors which lead to the attainment of good illustrations, *viz.*, the quality of the original photograph or drawing, the engraving, grades of ink and paper, and techniques of actual printing at the plant.

American Association of Veterinary Clinicians

The American Association of Veterinary Clinicians was founded on Aug. 18, 1958, at a meeting held in connection with the Ninety-Fifth Annual meeting of the AVMA, in Philadelphia. Academic clinicians representing most of the North American veterinary schools were present.

A constitution was adopted and the following officers were elected: Drs. Edwin J. Frick, Kansas State College, president; John W. Kendrick, University of California, vice-president; Wade O. Brinker, Michigan State University, secretary-treasurer.

Membership in the association is open to all people engaged in veterinary clinical work at the various colleges. The improvement of clinical departments in the school and colleges and the fostering of excellence in clinical research are the primary aims of the association. Dues have been set at one dollar per year.

Anyone interested in becoming a member or in obtaining more information about the association may write to: Dr. Wade O. Brinker, College of Veterinary Medicine, Michigan State University, East Lansing. The next meeting will be held at Kansas State College, Manhattan, in 1959, just prior to the Ninety-Sixth Annual Meeting of the AVMA, in Kansas City.—*Edwin J. Frick, president; and Robert R. Marshak, School of Veterinary Medicine, University of Pennsylvania.*

American Society of Veterinary Ophthalmology

The first formal meeting of the newly organized Society of Veterinary Ophthalmology was held on Aug. 19, 1958, with 60 veterinarians in attendance.

A history and an enumeration of the reasons for the founding of the society was presented by the president, Dr. W. G. Magrane, Mishawaka, Ind. Dr. Leonard Krawitz, Philadelphia, introduced Dr. Robert Trueman, associate professor of clinical ophthalmology, Graduate School of Medicine, University of Pennsylvania, who presented an illustrated (slides) lecture on "ocular therapeutics."

In his presentation, Dr. Trueman emphasized the importance of the interrelationship between human and veterinary medicine. He also discussed the uses and misuses of the antibiotics and corticosteroids in relation to diseases of the eye, pointing out particularly the dangers associated with the use of corticosteroids in corneal ulceration, showing that long continued use of these preparations sensitizes an eye to fungus infections. A question and answer period completed the program.

Men who are interested in affiliation with this society are asked to contact Dr. Robert Cello, School of Veterinary Medicine, University of California, Davis.—*Robert Cello, Secretary-Treasurer*

Zoo Veterinarians

Thirty persons attended the thirteenth consecutive meeting of the Zoo Veterinarians on Aug. 18, 1958, in the Sheraton Hotel in Philadelphia.

The aims and accomplishments of the group were reviewed as follows: to inform those in attendance of the newer developments in veterinary medicine applicable to wild animals; to publish and disseminate information on this subject; and to encourage the wider use of veterinary services in zoos.

Dr. Byron Bernard, Cincinnati, Ohio, gave an interesting report and showed kodachromes taken during his expedition to deliver a shipment of milk goats to Dr. Albert Schweitzer at Lambaréné, French Equatorial Africa. He also described some of the animals he collected for the Cincinnati Zoo.

Dr. Charles Gandal, veterinarian at the New York Zoological Society, reported on cranial trauma in pigeons and Dr. James Wright, veterinarian at the National Zoo in Washington, D.C., reported on the use of the dart gun for administering drugs to zoo animals.

The following morning, August 19, Dr. Herbert L. Ratcliffe, director of the Penrose Research Laboratory, led the group on a conducted tour of the Philadelphia Zoo.—*Patricia O'Connor, Secretary.*

Women's Veterinary Medical Association

The annual meeting of the Women's Veterinary Medical Association convened on Aug. 18, 1958. Dr. Lea McGovern, Lansdale, Pa., chairman of the meeting, and Dr. Lillian Giuliani, Berwyn, Pa., were hostesses at a coffee hour for the women veterinarians attending.

"Women in Veterinary Medicine" was the theme of the educational portion of the program. Dr. Marguerite B. Gulick, Great Barrington, Mass., introduced the following speakers on the program: Drs. M. Phyllis Lose, Berwyn, Pa.—Fertility of Horses; Nancy W. Riser, Upper Darby, Pa.—The Cat and Small Animal Practice; Doris Sell Emerson, Buckingham, Pa.—Two Can Practice as Cheaply as One; M. Lois Calhoun, East Lansing, Mich.—Tang of Teaching; Patricia O'Connor, Staten Island, N. Y.—The Zoo Veterinarian; and Louise S. Lombard, Lemont, Ill.—The Veterinarian in Atomic Research.

The business meeting which followed was conducted by Dr. Lombard, the president of the association. The roster of officers elected for the coming year is: Drs. Patricia O'Connor, Staten Island,

N.Y., president; Barbara Boyd, Waynesboro, Va., Southern vice-president; Rebecca Lloyd, Brooklyn, N.Y., Eastern vice-president; Jean Rumney, Hamilton, Ont., Can., Central vice-president; Rebecca Taylor, Long Beach, Calif., Western vice-president; Marguerite B. Gulick, Great Barrington, Mass., secretary; and M. Lois Calhoun, East Lansing, Mich., treasurer.

Selected as the 1958 recipient of the annual W.V.M.A. Award, Dr. Jean Rumney of Hamilton, Ont., received a $50 prize as the year's most outstanding woman veterinarian.

The association voted to donate $100 to the Women's Auxiliary Student Loan Fund with the recommendation that applications from women students be favored. Following the business meeting, Dr. Harry Steinbach, Blue Bell, Pa., presented an illustrated talk on his recent trip to Pakistan where he had been invited to act as judge at their annual national horse show.

Members and their families were dinner guests of the association, following the meeting.—*M. B. Gulick, Secretary.*

Association of Deans of American Colleges of Veterinary Medicine

The Association of Deans of American Colleges of Veterinary Medicine met on Sunday, Aug. 17, 1958, in the Delaware Valley Suite A of the Sheraton Hotel in Philadelphia. President E. E. Leasure presided.

All of the 20 veterinary schools were represented. Reports were heard on the examination for federal accreditation, operational policies and staffing problems of divisional libraries, professional status of schools and colleges of veterinary medicine; on the procurement, training, and utilization of personnel, as well as reports on the federal legislation affecting veterinary medicine.

Among the various subjects discussed were the numbers and methods of handling applications, needed curriculum changes, student counseling, and policies on student dress.

Once again, the officers of the association were reelected. They are as follows: Drs. E. E. Leasure, president; W. A. Hagan, vice-president; and A. H. Groth, secretary-treasurer.

The next meeting is scheduled to be held in Washington, D.C., on Nov. 10, 1958.—*A. H. Groth, Secretary-Treasurer.*

American Association of Veterinary Anatomists

The tenth annual meeting of the American Association of Veterinary Anatomists was held in two sessions. The first session, a business meeting following the annual luncheon, was held at the Sheraton Hotel on August 19, 1958, with the president, M. Lois Calhoun, presiding.

The items discussed were: affiliation with the AVMA, radiological anatomy, the philosophy of teaching veterinary anatomy, anatomical nomenclature, the International Association of Veterinary Anatomists, and the histology collection of the Armed Forces Institute of Pathology.

The second session was held at the anatomy department of the veterinary school at the University of Pennsylvania, on Aug. 21-22. The latter program included a tour of Longwood Gardens (du-Pont estate), inspection of the University's facilities at the new Bolton Center, an illustrated lecture on avian hematology by Dr. Alfred M. Lucas of the U.S. Regional Poultry Laboratory, East Lansing, Mich.; a tour of the Anatomy Department of the Veterinary School, and demonstrations of embalming equipment, stages of fetal ossification in the dog, tissue culture, and other anatomical techniques.

A total of 37 persons attended the two sessions. The officers elected for the coming year are: Drs. Donald G. Lee, Pennsylvania, president; Clifford Westerfield, Georgia, president-elect; T. C. Fitzgerald, Alabama, secretary-treasurer.—*Clifford Westerfield, Secretary-Treasurer.*

Industrial Veterinarians' Association

The Industrial Veterinarians' Association annual meeting was held Aug. 18, 1958, at the Sheraton Hotel in Philadelphia.

The following officers were elected by the association for the ensuing year: Drs. Joseph M. Fell, Warner-Chilcott Laboratories, president; Franklin O. Gossett, Eli Lilly Company, president-elect; Ross G. Brown, American Cyanamid Company, secretary; and O. H. Siegmund, Merck & Company, Inc., treasurer.

Comprising the I.V.A. executive board for 1958-1959 are: Drs. Donald Rankin, E. R. Squibb & Sons, and Gordon Stocking, The Upjohn Company. — *Ross G. Brown, Secretary.*

American Association of Veterinary Bacteriologists

The seventh annual meeting of the American Association of Veterinary Bacteriologists was held Saturday, Aug. 16, 1958, at the University of Pennsylvania's School of Veterinary Medicine. Dr. I. Live, School of Veterinary Medicine, University of Pennsylvania, presided, and Dr. Mark W. Allam, dean of the School of Veterinary Medicine, delivered the welcoming address.

Dr. J. P. Newman, College of Veterinary Medicine, Michigan State University, was the moderator of a panel on "Teaching of Beginning Bacteriology to Veterinary Students." "The Gel Precipitin Test" was the subject of a talk by Dr. G. T. Edds, Fort Dodge Laboratories, Fort Dodge, Iowa, and Dr. J. P. Uscavage led a discussion and demonstration of laboratory methods for the diagnosis of mycotic infections.

Dr. E. H. Bohl, Columbus, Ohio, president of the association, presided at the business meeting. The report of the committee on standardization of

procedures for diagnosis of leptospirosis was given by Dr. E. V. Morse, Michigan State University, East Lansing.

A tour of the University of Pennsylvania's School of Veterinary Medicine concluded the meeting. There were 35 members present.

The following officers were elected for 1958-1959: Drs. I. Live, University of Pennsylvania, president; E. V. Morse, Iowa State College, president-elect; and C. H. Cunningham, Michigan State University, secretary-treasurer.

The annual meeting for 1959 will be at Iowa State College on the Saturday before the AVMA meeting.—*C. H. Cunningham, Secretary-Treasurer.*

American Association of Veterinary Nutritionists

The annual meeting of the American Association of Veterinary Nutritionists was held in the Constitution Room of the Sheraton Hotel, on Aug. 18, 1958. Dr. R. E. Lubbehusen, president of the association, opened the meeting.

Dr. Paul Gyorgy, professor of pediatrics, School of Medicine, University of Pennsylvania, addressed the group on the "Future Trends in Clinical Nutrition." He also reported on tests conducted to study the effects of toxins produced in the digestive tract and invited participation and attendance at the International Nutrition Congress to be held in Washington, D.C., during the first part of September, 1960. "Nutrition and World Health Problems" will be the theme of the congress.

At the business meeting Dr. R. E. Lubbehusen, president, reviewed the activities of the past year and noted that much progress had been made.

Dr. R. C. Klussendorf, secretary-treasurer, reported on the activities, receipts, and expenditures of the association for the past year. Dr. T. J. Jones, chairman of the public relations committee, reported on two meetings with members of the research council of the American Feed Manufacturer's Association, and on a poll of the veterinary colleges which revealed that only two offer formal courses in animal nutrition.

Upon accepting the gavel, Dr. Cunkelman, incoming president, discussed "Where Are We Now, and Where Have We Been?" Both the president of the past year, Dr. R. E. Lubbehusen, and Dr. Cunkelman, have emphasized the rapid growth made by a comparatively small group of active workers and the need for a larger group to participate more extensively in a wider field.

Dr. R. C. Klussendorf, Terre Haute, Ind., was elected president-elect; Dr. R. E. Nichols, Madison, Wis., was chosen secretary-treasurer; and Dr. T. J. Jones, Athens, Ga., is chairman of the publications committee.—*R. C. Klussendorf, Secretary-Treasurer.*

American College of Veterinary Toxicologists

The American College of Veterinary Toxicologists met Sunday, Aug. 17, 1958, in the Delaware Valley Suite C of the Sheraton Hotel. An address by Dr. H. E. Furgeson, Anaconda, Mont., president, opened the day's session.

During the morning portion of the program, a "Progress Report on the Fluorosis Film Strip" was presented and Dr. William F. Harris, Puyallup, Wash., secretary, discussed "Charting a Course for an Expanded Organization." Dr. R. D. Radeleff, Kerrville, Texas, dealt with the "Prob-

The luncheon, sponsored by the University of Pennsylvania for science writers covering the AVMA convention, was held in the University Museum on Tuesday, August 19.
The speakers (center table), all associated with the University of Pennsylvania, are, left to right, Donald Sheehan, director of public relations; Dr. Mark Allam, dean, School of Veterinary Medicine; Dr. Gaylord Harnwell, president of the University; Clark Davis, associate trustee of the University and chairman of the Veterinary Schools' Council on Education and Research; and John McK. Mitchell, vice-provost for Medical Affairs and dean of the Medical School.

lems with Insecticides" and Dr. William J. Clarke, Hanford, Wash., spoke on "Studies in Radiology."

After luncheon, the following speakers (and their respective subjects) appeared on the program: Dr. P. V. Christofferson, Pleasant Grove, Utah—Florosis—Evaluation of Clinical Symptoms of Chronic Bovine; Major Samuel W. Thompson, Denver, Colo.—Toxicologic Aspects of Food Chemistry; and Mr. O. A. Heath, Laramie, Wyo. —Selenium Poisoning.

Among the college's objectives are: to further educational scientific progress; to establish standards of training and experience for qualifications of specialists in veterinary toxicology; as well as to accumulate and disseminate information in the field of toxicology.

Veterinarians who are interested in learning more about the organization or in securing membership applications are invited to write to: Dr. William F. Harris, 1102 East Main, Puyallup, Wash.—*William F. Harris, Secretary.*

American Veterinary Radiology Society

The American Veterinary Radiology Society met in the Constitution Room of the Sheraton Hotel in Philadelphia on Wednesday, Aug. 20, 1958.

Dr. W. H. Rhodes, New Jersey, vice-president of the society, arranged the program. The speakers and their subjects included: Drs. William Tuddenham, M.D.—Principles of Viewing an X-Ray; Dr. J. Jenny (ZUR '42)—X-Ray Diagnosis and Treatment of Canine Stifle Injuries; A. Raventos, M.D.—Radiation Hazards and Safety.

Dr. Harlan Jensen (ISC '41) presided over the business meeting at which the following officers were elected: Drs. Wayne Riser, president; W. H. Rhodes, president-elect; Myron Burnstein, vice-president; and J. J. Fishler, secretary.—*J. J. Fishler, Secretary.*

American Association of Avian Pathologists

At the AVMA Convention held in Cleveland in 1957, a meeting was held to organize an association of poultry disease workers. During the recent AVMA Convention in Philadelphia, a second meeting of this group was held and the American Association of Avian Pathologists was formed. A tentative constitution and bylaws was adopted which will be revised before it is permanently adopted next year.

The following officers were elected: Drs. Ben S. Pomeroy, president; Erwin Jungherr, vice-president; and M. S. Cover, secretary-treasurer.

Dr. Pomeroy and the executive officers appointed the following committees: Membership Committee—Drs. C. A. Bottorff, chairman; T. W. Millen; and Henry Adler. Nominating Committee —Drs. L. C. Grumbles, chairman; Harold Chute; and M. S. Hofstad. Resolutions Committee—Drs. A. S. Rosenwald, chairman; Julius Fabricant; and C. D. Lee. Constitution and Bylaws Committee—Drs. Henry Van Roekel, chairman; Steve Hitchner; and J. O. Alberts.

The objectives of the organization as outlined at the Philadelphia meeting are as follows:

Section 1—To provide an organization for the promotion of mutual interest of those persons engaged in the field of avian diseases.

Section 2—To stimulate scientific progress in avian pathology.

Section 3—To encourage adequate training in poultry diseases and management in schools of veterinary medicine.

Section 4—To encourage graduate and other forms of advanced training in avian diseases.

Section 5—To encourage the publication of a scientific journal on avian diseases.

The membership in the organization under the tentative constitution and bylaws is as follows:

1) Charter membership

Charter members shall have the qualifications of members and shall be those who have had fifteen years' experience in avian pathology joined together at 1957 Annual Meeting of the American Veterinary Medical Association to initiate this association, plus others elected by a two-thirds vote of the original charter membership. These latter must also have fifteen years of experience in avian pathology and shall be elected within the first year following adoption of the constitution and bylaws.

2) Membership

a) Must be a member in good standing of the American Veterinary Medical Association.

b) Must have satisfactory moral and ethical standings in the profession and a minimum of three years' experience in avian diseases.

3) Associate membership

Persons who have been engaged in some phase of avian pathology for a minimum of three years and who have made significant contributions to knowledge in this field.

Any inquiries regarding the Association can be addressed to Dr. M. S. Cover, Department of Animal and Poultry Industry, University of Delaware, Newark, Del.—*M. S. Cover, Secretary.*

American Association of Veterinary Parasitologists

The American Association of Veterinary Parasitologists was called to order by President L. E. Swanson on Aug. 18, 1958, at the Sheraton Hotel. The business meeting was concerned with the election of officers and various problems relating to the association's constitution and bylaws.

Dr. F. R. Koutz of Ohio State University was elected president and Dr. C. G. Durbin, of Washington, D.C., vice-president; both offices run currently for two years. The office of secretary-treasurer expires next year.—*Wendell Krull, Secretary-Treasurer.*

Treatment of Chronic Canine Otitis Externa by Ablation of the Ear Canal

CHARLES O. SEWARD, D.V.M.; WILLIAM M. BLACKMORE, D.V.M.; RICHARD L. OTT, D.V.M.

Bremerton and Pullman, Washington

INTENSIVE MEDICAL treatment and surgical drainage are the two procedures used in veterinary practice to alleviate chronic canine otitis externa. Unfortunately, some animals fail to respond satisfactorily to either or both methods. This paper describes a third method of therapy, ablation of the ear canal, which has proved to be highly successful in correcting this condition.

On Aug. 25, 1947, an 11-year-old female Cocker Spaniel was brought in with a badly mangled ear, which had been caught in the drive shaft of an inboard motor boat. The ear had literally been torn from the head, severing the annular cartilage almost at the tympanic membrane. Surgical repair being impossible, the entire ear, including the ear canal, was completely removed. Recovery was uncomplicated.

Three months later, a 6-year-old female Cocker Spaniel was presented with an identical injury from the same cause. Again, the ear was completely removed and recovery was uncomplicated.

Later, another 6-year-old female Cocker Spaniel was admitted, with a tumorous mass extending into and occluding the left ear canal. It was impossible to completely remove the mass surgically without removing the ear canal. Since the 2 traumatic cases had healed satisfactorily, the same technique was used in this dog. A photograph taken seven years later (fig. 1) shows that the long hair growing from the base of the ear has served as an esthetic substitute for the removed pinna or ear flap.

The operation has since been performed on several dogs with chronic indurative otitis externa. The results have been consistently good.

Possible objection to the removal of the ear flap led to a modification of the operative procedure to leave the ear unaltered in appearance.

Dr. Seward is a small animal practitioner, and Dr. Blackmore is a general practitioner in Bremerton, Wash. Dr. Ott is in the Department of Clinical Medicine and Surgery, College of Veterinary Medicine, State College of Washington, Pullman.

Fig. 1—Aged Cocker Spaniel seven years after ablation of ear canal and amputation of ear flap.

SURGICAL PROCEDURE

General anesthesia is used. The ear flap and the area surrounding the external auditory meatus is clipped and prepared for surgery (fig. 2). The initial incision is made on the concave surface (inside) of the ear flap, extending entirely across the ear

Fig. 2—Surgical preparation for ablation of the ear canal of a dog. Patient is draped and scalpel poised for initial incision.

from border to border, at the "break line" of the auricular cartilage in dependent type ears (fig. 3).

The incision, which penetrates the cartilage but leaves the convex (outside) skin

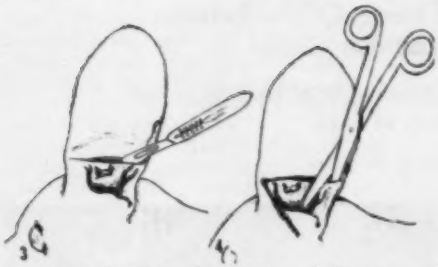

Fig. 3—Initial incision for ablation of the ear canal of a dog.

Fig. 4—The initial incision is extended from either end downward, so they meet below the external auditory meatus.

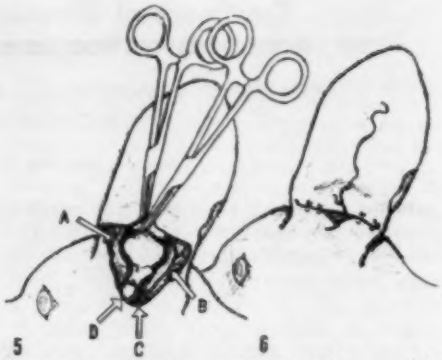

Fig. 5—The cartilaginous external auditory canal is being lifted outward; auricular arteries (A, B), internal carotid artery (C), and facial nerve (D).

Fig. 6—Closure of the incision after ablation of the ear canal of a dog.

intact, should be above the indurative ridges and prominences of the cavum conchae, so that these structures will be removed with the ear canal.

The use of a pointed scissors, rather than a scalpel, to incise the cartilage reduces the risk of severing the auricular arteries and satellite veins located between the cartilage and convex skin surface.

The incision, through the skin only, is then extended proximally at each border of the ear flap (fig. 4), to include the external auditory meatus. The cartilaginous external acoustic meatus is freed by blunt dissection and the edges of the freed meatus are grasped firmly with Allis tissue forceps (fig. 5). Using outward traction, the cartilage is freed by blunt dissection from the attached muscle and aureolar tissue.

The incision is continued ventrally and medially, following the outer surface of the meatus auricularis or the rolled, deeper portion of the cartilage. The meatus auricularis surrounds the annular cartilage. When this point is reached, these structures are not separated but the dissection is continued around the annular cartilage toward the skull, ligating the small vessels when necessary.

The facial nerve (fig. 5D) is located, isolated, and preserved intact. The annular cartilage is freed by severing its cartilaginous attachment (the connectivum) from the osseous external process, leaving the tympanic membrane undisturbed. Removal of the cartilaginous ear canal, including the meatus auricularis and annular cartilage, completes the surgery.

Horizontal closure of the wound, with stainless steel or noncapillary sutures (fig. 6) will produce the most natural appearing flap in dogs with dependent ears. A Cocker Spaniel is shown (fig. 7) with the wound healed after ear canal ablation for correction of otitis externa.

Fig. 7—Healed incision, several weeks after ear canal ablation in a dog.

DISCUSSION

An operation is currently being perfected for dogs with erect ears so that the natural carriage can be preserved. The variance in anatomical terminology* makes a description of parts of the external ear of the dog difficult.

Drainage-type surgery for chronic cases

*For the most part the terminology used in this paper corresponds to that of Getty, R., Foust, H. L., Presley, E. T., and Miller, M. E.: Macroscopic Anatomy of the Ear of the Dog, Am. J. Vet. Res., 17, (1956):364-375; and Miller, Malcolm E.: Guide to Dissection of the Dog, 2nd ed., Ithaca, N. Y., 1949.

of indurative otitis has been described.[1-4] Unfortunately, many cases are not helped by a drainage-type operation.[3] Ablation, on the other hand, presents no operative difficulties or postoperative complications. In most instances, the dog can be discharged from the hospital 48 hours following surgery, and must be returned only for removal of the sutures.

It has been stated that total extirpation of the meatus acusticus externus may be a good complement to previous surgery of the ear canal.[3] Total extirpation has been performed on several occasions (by Manssonâ€), but the authors were unable to locate a detailed description of the procedure.

The advisability of bilateral ablation should always be considered. Ablation of the ear canal apparently diminishes, but does not destroy, hearing.

SUMMARY

Surgical removal of the canine ear canal is a practical, effective method of treating chronic indurative otitis externa, severe injury, or neoplasms of the ear canal. Under general anesthesia, the entire cartilaginous ear canal is removed down to the osseous external process. Recoveries have been uncomplicated and without disfigurement.

The described procedure is advised for dogs with dependent ears. A similar operation for dogs with erect ears is being developed.

â€ Mentioned in "Operation for Otitis Externa in Dogs According to Zepp's Method." Am. J. Vet. Res., 16, 1955):565-570.

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[3]Tufvesson, G.: Operation for Otitis Externa in Dogs According to Zepp's Method. Am. J. Vet. Res., *16*, (1955): 565-570.

[4]Zepp, C. P., Sr.: Surgical Technique to Establish Drainage of the External Ear Canal and Corrections of Hematomas of the Dog and Cat. J.A.V.M.A., *115*, (1949): 91-92.

Total Gastrectomy—Sequelae and Treatment.—Three forms of anemia were observed in 151 patients who underwent total gastrectomy, in Austria: (1) anemia due to iron deficiency; (2) abnormal composition of the blood of the pernicious anemic type; and (3) anemia of the aregenerative type. Early detection of the iron deficiency anemia was important because recovery could be effected only by the administration of iron.

Disturbances of maturation of red blood cells, as evidenced by the presence of megaloblasts, could be prevented by the continued administration of vitamin B_{12}. Greater fat intake at more frequent meals was necessary due to reduced fat absorption. It was also necessary to restrict carbohydrate intake, especially that of sugar.—*J.Am.M.A. (June 28, 1958): 1166.*

Scrotal Skin Temperatures of Bulls.—Surface skin temperatures of the backs, abdomens, and scrotums of bulls, in Israel, were 4 to 7 degrees higher in summer than in winter, whereas rectal temperatures were only slightly above normal in the summer. The scrotal temperature was usually 2 to 4 degrees less than that of the abdomen or back.

The reduced fertility of bulls during hot weather is apparently due to direct heating of the scrotum rather than to any increase in body temperature.—*A.I. Digest (July, 1958): 12.*

Effect on the Calf of Testosterone Given to a Pregnant Cow.—Two Hereford cows were injected with 1 mg. per kilogram of body weight of testosterone once weekly from the fifth to thirty-first weeks of pregnancy. One cow gave birth to a normal male calf, the other to a hermaphrodite which was killed for examination when 8 months old. Predominantly female, it had two ovaries, fallopian tubes, uterine horns, and a vagina, but the urethra terminated in a rudimentary penis.—*Vet Bull. (July, 1958): Item 2361.*

Migration of Spermatozoa in Goats.—In a study of migration of spermatozoa through the female gential tract of 32 goats, the sperm were found in the distal part of the oviduct between five and 25 hours after coitus. A low number of sperm reached the oviduct and their migration appeared to be influenced by changes during estrus.—*P. Ajello in Atti Soc. ital. sci. vet. (Sept., 1957): 327.*

A New and Versatile Operating Table

R. W. DOUGHERTY, D.V.M., M.S., and A. F. GAGNE, Jr., P.E.

Ithaca, New York

IT WOULD be impractical here to review the histories of the various types of operating tables used in large and small animal surgery, but certainly during the past several decades there has been little change in their general design or use.

For some time, one of us (R.W.D.) has been interested in experimental surgery in ruminants and, during the last three years, in experiments on sheep used in the study of the physiology of eructation. In the latter experiments, it was necessary to tilt the animals varying degrees and in various planes while working out the factors inhibiting and stimulating eructation.[1]

In fact, the success of the experiments depended entirely upon the positioning of the animals with the attached recording equipment. Most of the work was done on a homemade table, but the need for better equipment became more evident during the course of the experiments. The opportunity to design a more satisfactory table occurred when plans were being formulated for the new veterinary college buildings that have been occupied since July, 1957.

This table has proved highly satisfactory. During the past ten months, it has been used in many survival operations on experimental animals, including sheep, dogs, and 1 850-lb. heifer (fig. 2). It has also been used in a wide variety of experiments in which the experimental animals were sheep.

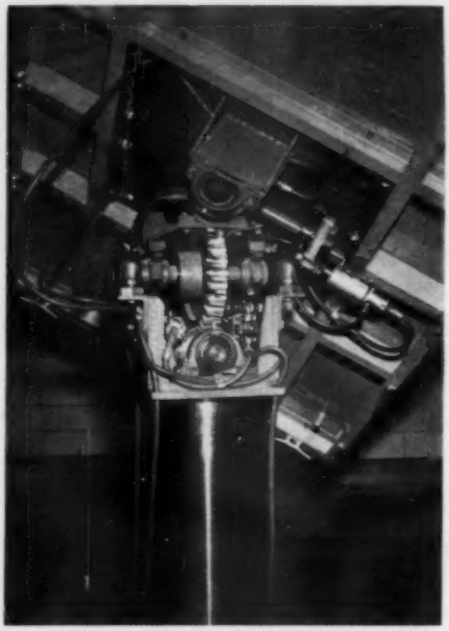

Fig. 1—Close-up of the tilting mechanism of the table.

CONSTRUCTION OF THE TABLE

The effectiveness and versatility of the table is based largely on its maneuverability. The animal can be placed at any angle (fig. 1) with a maximum tilt of 60 degrees in any direction, so that lighting of deeper internal structures can be effected easily and quickly and so that gravity can be used in positioning viscera, making the target organs and structures more accessible. The table top is of medium size (4 ft. by 6 ft.) and of sufficient strength to accommodate a wide range in size of the animal. The polished stainless steel surface is durable and easily cleaned.

The ability to vary the height of the table top from floor level to over 7 ft. is an important feature and is needed to use the tilting mechanism to its fullest advantage. Together these features reduce surgery time and add greatly to the comfort of the operator, lessening fatigue during long, tedious operations. This is a decided advantage in experimental surgery, where new operations and approaches are routine. To move heavy animals onto or off of the table, it is lowered almost to floor level.

Only three control levers are used in maneuvering the table. These can be covered with sterile cloths or with sterilized metal covers and can be managed by the

Dr. Dougherty is professor of veterinary physiology, New York State Veterinary College, Cornell University, Ithaca.

Mr. Gagne is a machine development consultant, Binghamton, N. Y.

[1]Dougherty, R. W., Habel, R. E., and Bond, H. E.: Esophageal Innervation and the Ecructation Reflex in Sheep. Am. J. Vet. Res., *19*, (Jan., 1958): 115-128.

Fig. 2—Although the table was originally designed for animals weighing 500 lb. or less, it is shown with an 850-lb. heifer undergoing major surgery.

operator or assistant without contaminating the hands. The air motor and air-hydraulic systems can be safely activated during the administration of highly explosive volatile anesthetics.

During the early work, some difficulty was experienced in keeping the anesthetized animals positioned during extreme tilting. This difficulty has been surmounted by strapping an aluminum "peg-board" device (fig. 3, 4) to the table top. The animals used have been held in place in any desired position, simply by positioning 5- or 8-inch metal pegs to outline the animal.

Mechanical details of the table are shown (fig. 1-4). In essence, it consists of a standard garage-type air-hydraulic lift surmounted by the special power-tilt mechanism and table. Tilting in each axis is effected by a self-locking worm gear, powered by a small vane-type air motor. In addition to being self-locking, this drive is smooth and safe. In case of inadvertent overload or contact with the floor, the air motor stalls harmlessly, avoiding any possibility of damage to the mechanism. Limit valves are provided to prevent overriding past the maximum angles.

Four plastic air hoses lead down the column into a pit, whence they connect to the single master tilt control valve. Movement of the master control handle left or right, front or back, produces a corresponding response from the table, and the amount of movement determines the speed and power of tilt.

The pit opening is covered by a removable stainless steel platform fitting about the column and permitting washing down when required. Rubber mattings are used on the floor around the table to minimize fatigue and facilitate cleaning.

Fig. 3—The "peg-board" keeps a medium sized animal in position when the table is tilted.

Fig. 4—An animal can be held in position on the "grid" when it is in an extremely tilted position.

After nearly a year's experience with this table, only two suggestions have been made to improve its over-all use. If it is used for large and heavy animals, the construction should be a little heavier. It might also be advantageous to make a pit that would allow the table to be lowered so that the top of the table would be flush with the floor. This would necessitate the use of a manual or mechanically controlled pit-covering.

Cesarotomies.—The first cesarean section known is said to have been performed at the end of the fifteenth century by a German veterinary surgeon (a pig castrator) on his primiparous wife, with both mother and son surviving. The writer credits the name to the similar birth of Caesar in the same century.—*G. Biondo in Atti Soc. ital. sci. vet. (Sept., 1957): 356.*

Clinical Data

Additional Studies of Fibular Defects in Horses

W. C. BANKS, D.V.M., and C. W. SCHULZ, D.V.M.

College Station, Texas, and Chicago, Illinois

THE PURPOSE of this paper is to point out that defects of the equine fibula are oftentimes incriminated as a cause of lameness, when actually the lameness may be caused by factors other than a defective or fractured fibula.

That actual fracture of the fibula does occur in some instances is not questioned, but other defects do exist, and they may be erroneously diagnosed as fractures.

Fractures of the equine fibula and their clinical importance have been described at least five times in the past several years. Four of the authors feel that a fracture of this bone can cause a serious lameness.[2,4-6] A fifth investigator expressed some reservations as to the clinical effects of pathological changes in this bone.[3]

Some 12 months ago, the A. & M. College of Texas Clinic began a radiographic survey of the fibulae in 40 horses, 3 months to 20 years old. They were mostly standardbred, thoroughbred, or quarter horses and were presented at the clinic for a variety of reasons, including colic, castration, and strangles. None were lame.

The age, breed, and clinical history of each horse were obtained, and a radiograph was made of their right and left fibulae.

NECROPSY FINDINGS

Three horses, in which radiographs indicated a fracture of the fibula, were examined after they died or were killed. Necropsies were followed by gross and histopathological studies of the fibulae. The basic changes reported[1] were similar in all three specimens.

There is a separation of the fibulas approximately 5 cm. from the proximal end, which allows them to bend as if jointed. This line of separation is oblique, running ventrally and medially toward the tibia. The separations are essentially in the same location, direction and size in the two fibulas from each horse. Grossly the separation in the bone is visible as a white line approximately 0.5 mm. thick. The edges of the ends of the bones are rounded, the middle of the proximal end being slightly convex and the opposite portion of the ventral segment being concave. The ends are slightly out of line, the proximal being displaced medially.

Fig. 1—Shows entire and complete fibula of a horse.

Microscopically, the line of separation consists of a fibrous union of the separate pieces of fibula with some metaplastic formation of fibro-cartilage. The marrow adjacent to the separation is partially filled with fibro-blasts. In some areas the tissue connecting the two pieces of bone is necrotic.

The location and the microscopic appearance, especially the presence of necrotic tissue and fibro-cartilage in these separations suggest that they are fractures with fibrous union.

TABLE 1—Defects of the Fibulae in 40 Horses, Grouped According to Radiographic Appearance

Group	Description of the fibula	Horses affected (%)
1	Entire and complete fibula	17.5
2	Both right and left appear to have fracture line	25.0
3	Shaft absent in one or more places for distances up to 6 cm.	17.5
4	Only proximal third present	30.0
5	Entirely absent	5.0
6	Only a small portion of proximal part present	5.0

Dr. Banks is at the Department of Veterinary Medicine and Surgery, A. & M. College of Texas, College Station; Dr. Schulz is manager of veterinary services, Quaker Oats Co., Chicago, Ill.

Presented at the Section on Surgery and Obstetrics, Ninety-Fifth Annual Meeting, American Veterinary Medical Association, Philadelphia, Pa., Aug. 18-21, 1958.

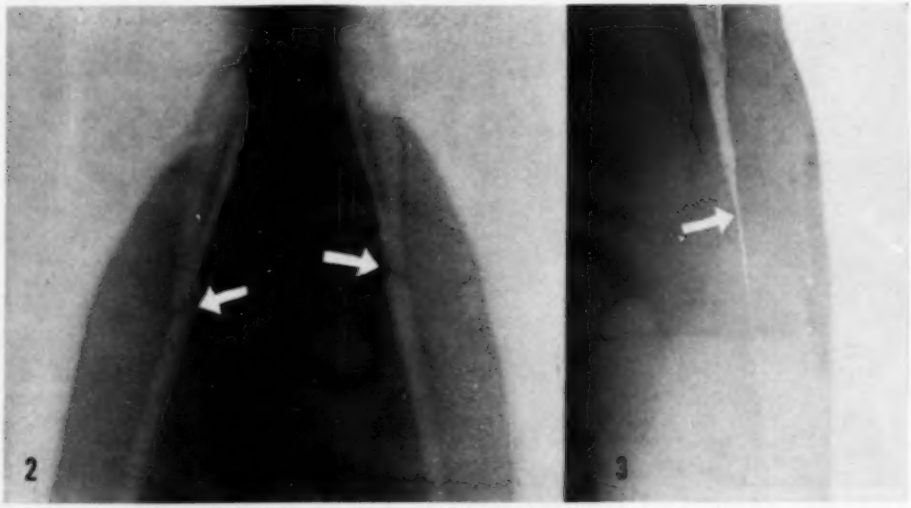

Fig. 2—Shows fracture line (arrows) in both right and left fibulae of a horse.
Fig. 3—Shows absence of fibular shaft (arrow) in one or more places.

Pathologists from several other institutions examined the slides but were reluctant to make positive statements about the histopathological findings at the fracture site.

RADIOGRAPHIC FINDINGS

Evaluation of the 80 radiographs of the 40 horses was as follows: (1) In 36 horses (90%), the radiographs of the right fibulae were mirror images of the left ones (fig.

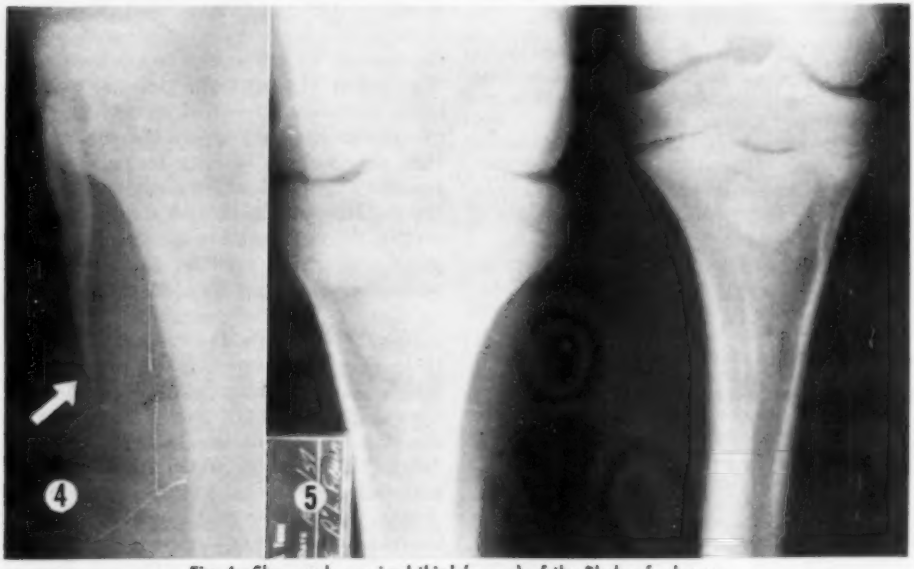

Fig. 4—Shows only proximal third (arrow) of the fibula of a horse.
Fig. 5—Shows absence of the fibula.

Fig. 6—Shows presence of only small proximal portion (arrow) of the fibula of a horse.

2); and (2) the radiographic appearance of the fibulae (fig. 1-6) is divided into six groupings (table 1).

Of the 40 horses surveyed, 7 (17.5%) had normal fibulae and the remaining 33 (82.5%) had fibulae which were defective without causing lameness.

CONCLUSIONS

1) Similar appearances of most right and left fibulae may confuse the diagnosis of lameness in horses by radiographic examination.

2) Aberrations of the fibula other than a fracture line exist.

3) The presence of paired aberrations suggests a congenital or even vestigial cause in some horses.

4) Horses often have abnormal fibulae without showing clinical effects.

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"Heart Death" of Swine

The cause of "heart death" of swine (often mentioned in German literature) is not exactly known. Numerous studies in the past decade show: (1) no deviation in blood cells except for eosinophilia; (2) no hereditary tendency; (3) no association with a balanced diet or hygiene; and (4) no transmission by oral or parenteral inoculation with organ extracts, or with intracerebral inoculation of brain suspensions. Dysfunction of the thyroid and suprarenal gland is frequent but probably secondary.

Until after World War II, "heart death" was recognized chiefly in swine in the potato-feeding areas of central and eastern Germany, but it has since spread throughout Germany and to adjacent nations.

The disease has been reproduced in healthy swine on unaffected farms by feeding boiled potatoes prepared on affected farms, but not when the potatoes were similarly prepared on unaffected farm. The disease could not be reproduced by feeding the same potatoes raw or by injection of their juices. This is probably an allergic condition.—*A. Maas in Arch. f. exptl. Vet.-med., 12, (1958): 82.*

Effectiveness of Tetanus Toxoid.—As a result of the research of Dr. G. Ramon, tetanus was practically eliminated where vaccination was practiced in the armies of World War II. Antitoxin (toxoid) prophylactic inoculation resulted in only 12 cases of tetanus developing in the 10 million U.S. servicemen; in only three Canadian servicemen, one of which died; and reduced the incidence in the British service to 4 per cent of the number of cases which occurred in World War I.—*Rev. path. gen. et physiol. clin. (Jan., 1958): 35.*

Family Farms are Increasing.—Contrary to the general opinion, farms classified as family farms, which were decreasing in number prior to 1939, have been slowly increasing since that time. A family farm is defined as one from which the total products bring $2,500 to $25,000. Such farms account for 60 per cent of the total farm business. The decrease in number has been mostly in smaller farms.—*Prairie Farmer (Aug. 16, 1958): 12.*

Chemical Identification of Crotalaria Poisoning in Horses

DENNIS H. COX, Ph.D.; DOROTHY L. HARRIS, B.S.;
THOMAS A. RICHARD, D.V.M.

Tifton, Georgia

SPECIES OF the plant Crotalaria have been used extensively as a cover crop in the southern states. Its popularity has declined since it has been shown[7,8] to be toxic to all types of farm animals. However, deaths caused by the consumption of Crotalaria will probably continue since it is difficult to eradicate or control. This is because the seeds remain in the soil for a considerable period of time before germination, the plant reseeds readily, and it is a perennial.

The poisonous principle is the alkaloid monocrotaline.[6] Its formula, $C_{16}H_{23}O_6N$, and structure have been determined.[1] The alkaloid may be isolated from all portions of immature and mature plants, the seed portions containing the highest concentration. In addition to monocrotaline, tannins, unsaturated sterols, and organic acids have been found in all parts of the plant.[9]

Crotalaria causes death in horses.[4,5,8] The clinical and pathological changes have been adequately described.[4,5] The liver is described as firm and cirrhotic, and having a blue to yellow coloration. Recent work[2] has indicated that hepatovenous occlusions are apparently a specific pathological change characteristic of Crotalaria or Senecio poisoning.

CASE HISTORY

Three horses in a herd died during 1957. Another died in April, 1958, apparently from old age. These animals were on a pasture containing *Crotalaria spectabilis* and were fed supplemental hay and a commercial horse feed. On May 22, 1958, another horse became ill, exhibiting extreme listlessness, weakness, stumbling, and a profuse diarrhea. It was treated for three days with penicillin and vitamin B-complex. It appeared to be doing well until May 26, when a relapse occurred and it was given an antihistamine and vitamin B-complex. Its appetite remained poor and it lost considerable weight and died on May 30.

Another horse died on May 27, three hours after it was noticed to be ill. At necropsy, there was severe cirrhosis of the liver, congested abdominal blood vessels, visceral edema, and orange colored and edematous lymph vessels. Specimens were sent to the Tifton laboratory for toxicological examination.

LABORATORY RESULTS

The Reinsch test (arsenic, antimony, bismuth, mercury, and silver) was performed on the liver and the stomach contents, with negative results. A biological test, also on the liver and the stomach contents, for organic insecticides using *Drosophila melanogaster* was also negative.

Since Crotalaria was in the pasture and cirrhosis of the liver was indicative of poisoning by this plant, an alkaloid extract[3] was made from the liver. The acid-chloroform extract was negative for alkaloids. However, the alkaline-chloroform extract gave a slightly positive spotplate test using iodine-potassium iodide (Wagner's), potassium bismuth iodide (Dragendorff's), and potassium mercuric iodide (Mayer's) alkaloid reagents and a positive spot-paper test using potassium iodoplatinate spray reagent.

The extract was purified by circular paper chromatography[3] for further testing. Also, for identification purposes, the R_f value of the unknown alkaloid was compared with the one obtained with monocrotaline determined simultaneously. The R_f value was 0.68 for both the unknown alkaloid and the known monocrotaline.

Ultraviolet spectroscopy of the acid solution from the alkaline-chloroform extract gave an absorption spectrum that was suggestive of monocrotaline. Further purification by paper chromatography resulted in an absorption spectrum identical to that obtained with known monocrotaline (graph 1).

Identification of the unknown alkaloid as monocrotaline was further substantiated by use of color tests. Portions of the acid eluate were dried in the depressions of a white porcelain spot-plate. For comparison, the known monocrotaline was treated

Dr. Cox is associate toxicologist and Mrs. Harris is technician, Department of Animal Diseases, University of Georgia, Tifton; Dr. Richard is base veterinarian, Moody Air Force Base, Valdosta, Ga.

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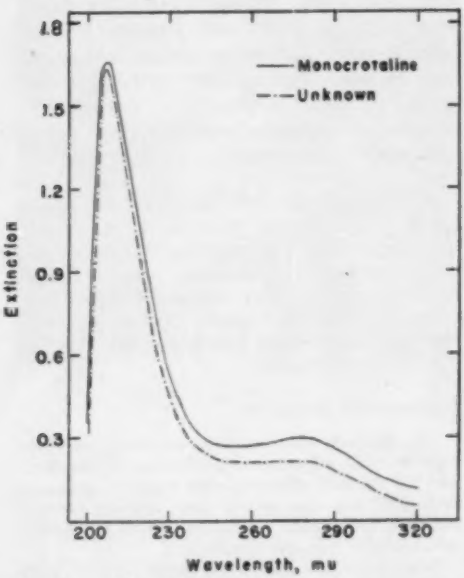
The authors acknowledge the assistance of Dr. Loyce Turner, practitioner, Valdosta, Ga.; Mr. Warren Marchant and Mr. J. L. Stephens, Georgia Coastal Plain Experiment Station, Tifton, for identification of Crotalaria spectabilis; and Drs. W. F. Schroeder and E. M. Ellis, Department of Animal Diseases, for the histopathological information.

in a similar manner. To the dried residue of each, 1 to 2 drops of Mandelin's (vanadic acid), Fröhde's (molybdic acid), or Wasicky's (paradimethylaminobenzaldehyde in alcohol) reagent was added. No color was formed by Mandelin's or Wasicky's.



Graph 1—Absorption spectrum of known monocrotaline (100 p.p.m.) and of the suspected, unknown alkaloid.

However, depending on the concentration of alkaloid and purity of sample, the unknown and the known monocrotaline gave the following color changes with Fröhde's reagent: peach, which gradually turned to peach with a green or blue edge and, upon further standing, the entire solution became blue-green or blue. The color was blue with pure and concentrated samples of monocrotaline. The blue turned to light green and the blue-green to yellow upon warming and, upon cooling, the original color returned.[8]

The microscopic sections showed thickening of the capsule, an increase of interlobular connective tissue, atrophy and necrosis of the central cords, and marked hepatovenous occlusions.

DISCUSSION AND SUMMARY

This is the first known instance in which a case of Crotalaria poisoning was established by the isolation and identification of monocrotaline from the liver. Attention is directed to the ultraviolet absorption spectrum of monocrotaline and the color test using Fröhde's reagent.

Diagnosis of Crotalaria poisoning based on cirrhosis of the liver is not valid since other plants such as those belonging to the Senecio genus, alsike clover, *Atalaya hemiglouia*, and *Amsinckia intermedia* are known to cause the same liver damage. Since hepatovenous occlusions are found both in Crotalaria and Senecio poisoning, they can not be used for differentiation. However, the isolation and identification of monocrotaline from the liver and the finding of cirrhosis or venous occlusions of the liver justify an unequivocal diagnosis of Crotalaria poisoning.

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Scabies in Cattle and Sheep

During the year ending July, 1958, psoroptic scabies was diagnosed in two herds of cattle in Colorado and in one herd each in Iowa and Kansas. By June 12, 1958, no area in the United States remained under federal quarantine because of scabies in cattle.

Psoroptic scabies in sheep was diagnosed during the fiscal year ending July, 1958, in 726 flocks (57,405 sheep) in 300 counties in 24 states. This is an increase over the previous year of 44 flocks and 11 counties. *—Rep. Spec. Dis. Erad. Sect, U.S.D.A., ARS., Washington, D.C., July 30, 1958.*

Keratoconjunctivitis in the Goat

Capt. DONALD H. YOST, V.C., U.S. Army

Army Chemical Center, Maryland

A SEVERE necrotizing condition involving the conjunctivas, corneas, and occasionally the irides of the eyes of goats has been observed in northern Maryland periodically over the past few years. It is seen in Angora goats and, to a decidedly lesser extent, in mixed dairy breeds.

Most discussions of infectious keratitis in sheep refer to the goat as being refractory, along with several other species.[6] In Australia, the disease could not be transmitted from infected sheep to goats.[2] In sixteen years of observation in Texas, no case of infectious keratoconjunctivitis was observed in goats in spite of the great prevalence of the disease in sheep being pastured in the same fields, nor could the disease be transmitted from sheep to goats.[1]

However, the disease has been recognized in dairy goats in England and, on several occasions, in Maryland.[4] A condition identical to that observed by the author was reported in goats in India.[5] A mild conjunctival catarrh affecting about 10 per cent of a herd of 500 Swiss goats and associated with the presence of a Rickettsia-like organism has also been reported.[3]

CLINICAL HISTORY

This is a rapidly spreading disease which affects goats of all ages, with somewhat fewer cases among the young. There is no marked seasonal prevalence. Two major outbreaks have been observed in experimental herds maintained in northern Maryland in March and April of 1956 and 1957, but isolated cases have occurred during the summer, fall, and winter. The herd morbidity may be 50 per cent but 10 to 20 per cent is more common. It is usually bilateral. The incubation period has not been determined.

The characteristics of the disease are essentially the same as in sheep. Inflammation of the conjunctiva is first observed, with swelling and severe photophobia, followed by ocular discharge and opacity of the cornea. Vascularization of the cornea frequently occurs, and ulceration and rupture may result in extreme cases.

Recovery in mild cases may begin in four to seven days after the first signs but, in severe cases, it may be delayed as long as two to four weeks. Recovery is complete except when the cornea ruptures. In these cases, the scar tissue produced in healing results in only partial restoration of vision.

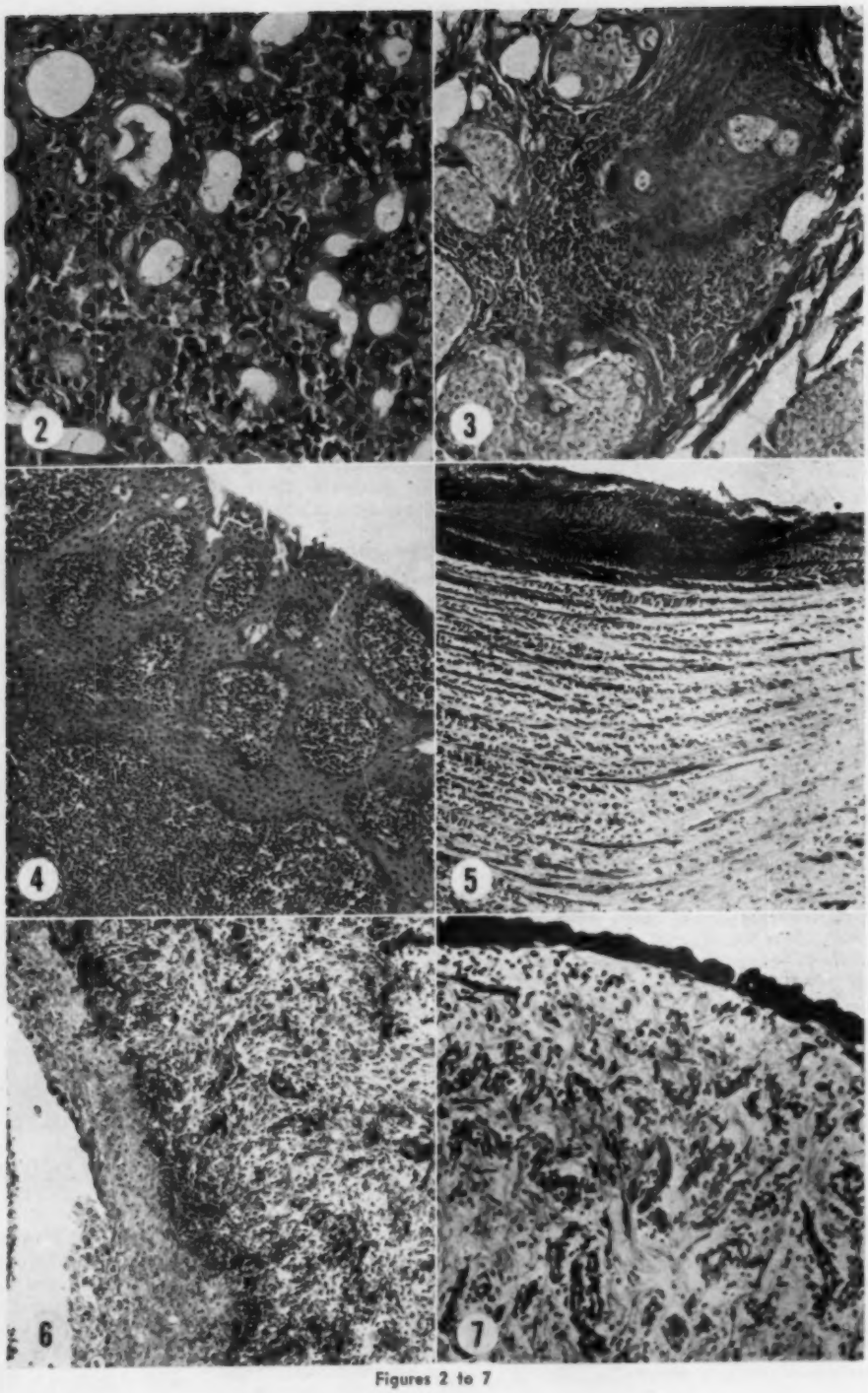
ETIOLOGY AND PATHOLOGY

Bacteriological studies have been unrewarding. Cultures from more than 60 eyes in all stages of the disease failed to produce organisms other than those routinely obtained from goats with normal, healthy eyes. Inoculation of both pure and mixed cultures of these microorganisms into eyes of unaffected goats failed to produce a keratoconjunctivitis.

Fig. 1—The conjunctival stroma and epithelium from the eye of a goat are massively infiltrated by lymphocytes and plasma cells. H & E stain; x 190.

Captain Yost is chief, pathology section, Army Medical Research Laboratory, Fort Knox, Ky.

The author thanks Mr. John Thompson for the preparation of histopathological materials.



Figures 2 to 7

Inoculation of conjunctival swabbings from animals with active lesions into the conjunctival sacs of 6 supposedly susceptible animals has resulted in only mild reddening of the conjunctivas for three days, probably the result of trauma.

Virological studies have not been completed. The disease seems to spread by direct contact early in the course of the infection.

In India, in 1945, no infective agent could be isolated and, in a limited number of trials, the disease was not transmitted to susceptible goats by conjunctival, intravenous, or subcutaneous inoculation of "infective" eye discharges.[5]

The earliest morphological change observed is a mild infiltration of the conjunctiva by lymphocytes and plasma cells in approximately equal numbers. The inflammatory elements appear first in the lamina propria, with invasion of the epithelium following shortly. The epithelium is disrupted or, in some areas, completely desquamated and replaced by inflammatory cells (fig. 1).

As the condition progresses, the lamina propria becomes more deeply invaded, there is a more extensive involvement of the epithelium, and the proportion of the lymphocytes increases. The lymphoid nodules normally found in the lamina propria of the eyelids are invaded by considerable numbers of plasma cells and small lymphocytes. Somewhat less frequently, the superficial glands of the third eyelid (fig. 2) and the tarsal glands of the eyelid itself are invaded by inflammatory cells (fig. 3).

As the condition becomes more severe, the epithelium of the conjunctiva becomes uneven in thickness, and proliferating fronds of epithelium extend downward into the underlying lamina (fig. 4). The lamina propria becomes edematous.

The earliest lesions in the eye proper appear at the corneoscleral junction. The corneal epithelium becomes uneven in thickness at the junction and, occasionally, in the central portions of the cornea. There is invasion of the corneal epithelium and the underlying stroma by limited numbers of neutrophils. The polymorphonuclear leukocytes increase tremendously as necrosis of the corneal stroma appears.

As the necrotic process develops, the corneal epithelium and the rudimentary Bowman's membrane are frequently destroyed completely, and the surface of the cornea becomes covered by a purulent conglomerate of exfolliated epithelium and dead leukocytes. The necrosis frequently extends through the entire thickness of the cornea, with replacement of the necrotized stromal cells by dense connective tissue (fig. 5). The cornea becomes greatly thickened and yet, in only a few cases, is Descemet's membrane and the corneal endothelium disrupted.

The massive necrotic lesions of the cornea are always accompanied by corneal vascularization (fig. 6), the new vessels varying in size from tiny capillaries to prominent, widely dilated vascular channels.

In the limited number of cases in which the iris is affected, mixtures of lymphocytes, plasma cells, and a few neutrophils invade it (fig. 7), pannus usually develops, and the zonular fibers and ciliary muscle may be involved. No discernible gross or microscopic changes are evident in the lens, and the retina, vitreous body, optic nerve, choroid, and sclera remain signally free of morphological change. The canals of

Legend for Illustrations on Opposite Page

Fig. 2—The interstitial tissues of the superficial gland of the third eyelid of a goat are diffusely infiltrated by lymphocytes. H & E stain; x 190.

Fig. 3—The tarsal gland of the lower eyelid is invaded by lymphocytes and plasma cells. H & E stain; x 190.

Fig. 4—Fronds of proliferating epithelium extend into the underlying lamina propria of the conjunctiva. Notice the massive leukocytic infiltration. H & E stain; x 90.

Fig. 5—Replacement of necrotic corneal stroma by strands of dense connective tissue. Many pyknotic inflammatory cells remain. H & E stain; x 90.

Fig. 6—Large numbers of vascular spaces are seen in this section of cornea. The epithelium is thickened and irregular, with exfolliation of epithelial cells. H & E stain; x 90.

Fig. 7—The iris is diffusely infiltrated by lymphocytes and plasma cells. Notice the many new vascular channels. H & E stain; x 90.

Schlemm remain patent and there is no evidence of change in the interocular pressure in affected eyes.

As the damaged eye begins to heal, the leukocytes decrease rapidly in number. If the cornea has not ulcerated, the stroma returns to its normal state. However, if there has been marked proliferation of epithelium, traces of this irregularity tend to remain, with little apparent effect on the animal's ability to see. Badly ulcerated corneas frequently heal, with only a small dense plaque of connective tissue remaining in the central portion, or residual scar tissue may be extensive, resulting in opacity.

SUMMARY

Keratoconjunctivitis in the goat is a mild to severe necrotizing condition of the eye involving the conjunctiva, cornea, and occasionally the iris. The cause is, at present, unknown. It is characterized by a serous or purulent conjunctival discharge, photophobia, corneal opacity, and occasionally corneal ulcers, with massive vascularization of the corneal stroma. In a few cases, the cornea may rupture.

Eyes not severely affected heal without permanent lesions but, where massive necrotizing lesions have occurred in the cornea, partial to total loss of vision results.

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Progress in Screwworm Control

Only 4 cases of screwworm infestation had been reported this year, up to September 10, in the southeastern United States north of the Florida State line. This decrease was attributed to the cold winter of 1957 to 1958 and the early release of sterilized male screwworm flies in northern Florida and southern Georgia. Screwworm infestations in the Southeast during 1958 were confined almost entirely to peninsular Florida. Optimism is growing with respect to the possible eradication of this fly from southeastern United States. Screwworm flies have already been eliminated in this manner from the Caribbean Island of Curacao.—*From a symposium held in connection with the Ninety-Fifth Annual Meeting of the AVMA, Philadelphia, Pa., August 18-21, 1958.*

Atoms and Screwworm Control.—An exhibit, "Atoms Versus the Screwworm," planned by the U. S. Department of Agriculture and the Atomic Energy Commission, was a feature of the United States display at the International Conference on Peaceful Uses of Atomic Energy which met in Geneva, Switzerland, September 1-13.

The exhibit told, in English, French, Spanish, and Russian, how 50 million screwworm flies are raised weekly in a laboratory and how the flies are sterilized by use of radioactive cobalt 60.—*U.S.D.A. Release, Aug. 27, 1958.*

A Method of Detecting Hog Cholera Virus in Swine Tissue Cultures.—Hog cholera virus is known to multiply in swine tissue cultures, but the cytopathogenic changes produced are discernible only by elaborate observations. A new *in vitro* method was developed for detecting and measuring this virus and its neutralizing antibodies, based on the exalting effect of hog cholera virus on Newcastle disease virus in swine testicle cell monolayer cultures.—*Science (Aug. 15, 1958): 366.*

A Gamma Globulin Preparation for Hog Cholera.—Gamma globulin prepared from anti-hog cholera serum, by precipitation with 25 per cent alcohol and 6 per cent glycerol, was used on 220 pigs. The protection was better than with hyperimmune serum (dosage not given).—*Vet. Bull. (May, 1958): Item 1431.*

A Bovine Weight Gain Record.—A 1,219-lb. Santa Gertrudis bull, 14 months old, at a Texas station, had gained 551 lb. in 140 days, an average of 3.9 lb. per day.—*Cattleman (Aug., 1958): 128.*

The Fertility of Frozen Bovine Semen Packaged Under Carbon Dioxide

J. W. MACPHERSON, B.V.Sc., D.V.Sc.

Guelph, Ontario

THE INCREASE in acidity of bovine semen during storage in a liquid state has been attributed to the accumulation of lactic acid due to glycolysis. Most investigators have felt that the buffering capacity of diluted semen should be sufficient to prevent the development of this condition.

However, it has been demonstrated that ram semen having poor motility and stored at a temperature of 22.5 C. at a pH of 5.5 can be restored to its original good motility by the addition of an equal volume of 1/15 Molar disodium phosphate.[2]

It has also been observed that the more acid normal bull semen is on collection, and the less its pH moves in an alkaline direction during storage, the better the motility will be retained.[1]

Recently, considerable interest has been aroused by the development of a method of room-temperature storage of bovine spermatozoa, utilizing the reversible action of carbon dioxide gas to acidify the diluting fluid.[4]

Therefore, it seemed worthwhile to observe the effects of carbon dioxide gas on frozen bovine semen where the air space in the ampules had been replaced by this gas. It was hoped that the presence of the gas might prevent or decrease the loss of spermatozoa during the period of equilibration.

PROCEDURE

A split-sample technique was employed, using semen from 7 normal bulls of three breeds diluted in pasteurized homogenized whole-milk diluent and glycerinated to 10 per cent by volume. One portion was packaged in sealed glass ampules with the air displaced by carbon dioxide gas; the second portion was packaged without the gas and served as a control. In both cases, two thirds of the available space within the ampules was filled with diluted semen.

The samples were examined microscopically to estimate the quality as based on motility, morphology, and viability of the spermatozoa before and after equilibration for 18 hours. Both control and treated portions were then frozen to −79 C.[3] Sample ampules of each lot were then thawed and examined microscopically to observe the effects of the gas. The pH of the diluent was also recorded at the time of each microscopic examination.

After freezing, the samples were transported to three artificial insemination centers, where they were used in the routine insemination of cows. The fertility of the samples was recorded on a 60- to 90-day nonreturn basis.

RESULTS AND DISCUSSION

Immediately after packaging, no difference in motility could be observed between the treated and untreated portions of the semen. After equilibration, and also after freezing, the type of motility and the viability of the treated samples were poor in comparison to those observed in the controls.

However, if the gas was allowed to escape from the treated samples by warming to 35 C. for 30 minutes, in most cases the motility was observed to be much improved.

TABLE I—The Fertility of Frozen Bovine Semen Packaged Under CO_2

	CO_2 Treated			Untreated		
Bull No.	No. bred	Non-returns*	Non-returns (%)	No. bred	Non-returns*	Non-returns (%)
1	114	71	62.28	187	131	70.05
2	110	64	58.18	160	98	61.25
3	99	59	59.59	184	135	73.36
4	58	19	32.75	63	38	60.31
5	58	21	36.20	63	37	58.73
6	115	44	38.26	113	84	74.33
7	114	68	47.22	194	145	74.74
Total	698	346	48.57	964	668	69.29

*On a 60- to 90-day nonreturn basis.

The pH of all samples was found to be 6.6 to 6.8 immediately after filling; after equilibration, little or no change was observed in the control samples, but a pH of 6.3 to 6.4 was observed in the treated samples.

When 698 cows were bred with CO_2-treated semen, a 60- to 90-day nonreturn rate of 48.57 per cent was obtained and, when 964 cows were bred with the un-

From the Division of Animal Reproduction, Ontario Veterinary College, Guelph, Ontario.

The author thanks the staffs of the artificial insemination centers at Waterloo, Woodstock, and Hamilton, Ontario, for their cooperation in carrying out the fertility trials; also Dr. S. D. Veselinovitch for assistance in the statistical analysis of the results.

treated portion of the same semen, the rate was 69.29 per cent (table 1), indicating that a lower conception rate may be expected when treated semen is used.

Statistical analysis of the data revealed the existence of a significant difference in fertility between the treated and untreated portions of the semen of 5 bulls (bulls 3 and 5 at 5%, bull 4 at 1%, and bulls 6 and 7 at .1%). No significant difference was observed in the fertility of the treated and untreated portions of semen obtained from bulls 1 and 2.

SUMMARY

A split-sample technique was used to compare the fertility of frozen semen from 7 normal bulls when packaged under carbon dioxide gas. Under the conditions of this experiment, the addition of carbon dioxide gas had an adverse effect on fertility.

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Studies on the Use of Illini Variable Temperature Semen Diluent in Beef Cattle

J. V. SCOTT, M.S., and H. J. HARDENBROOK, D.V.M., Ph.D.

Urbana, Illinois

ARTIFICIAL INSEMINATION in beef cattle is now in the applied stage, particularly in purebred herds. Many beef cattle breeders have found that artificial insemination affords economic advantages by permitting the use of bulls in partnership, extending the use of herd sires, utilizing bulls which are away at shows, and controlling disease.

Common methods, using liquid semen diluents, require frequent collections in order to have semen available for insemination. The use of frozen semen involves considerable expense due to the technical skill, laboratory facilities, and expensive equipment necessary for its processing and storing.

Recent reports[2,3] to the effect that dairy bull semen maintains its motility and fertility at room temperature for long periods aroused considerable interest among beef cattle breeders who were using artificial insemination.

The advantages of less frequent semen collections when using liquid semen, and the economic advantage over long-term frozen semen storage, seemed to give definite promise for the use of Illini variable temperature diluent (I.V.T.) in beef cattle. On the basis of motility studies, this diluent appeared to be a medium for semen storage for periods up to 30 days.

In theory, if semen stored in I.V.T. diluent would maintain fertility for 30 days then, with one or two collections, a breeder could have semen available for insemination during the breeding season. In order to evaluate this theory, the following field trials were undertaken.

EXPERIMENTAL PROCEDURE

Preliminary observations indicated that semen stored in I.V.T. diluent maintained motility for approximately seven days when held at room temperature. Comparable sperm motility was obtained for 30 to 35 days when the storage temperature was dropped to 7.0 C. Similar results were reported[1] when the storage temperature was lowered to 4.4 C. All semen processed on the farms and used in this fertility study was stored at 7.0 C.

The I.V.T. diluent is prepared as follows:[3] sodium citrate dihydrate (20.0 Gm.), sodium bicarbonate (2.1 Gm.), potassium chloride (0.4 Gm.), glucose (3.0 Gm.), and sulfanilamide (3.0 Gm.) are dissolved in 1 liter of distilled water.

Carbon dioxide gas is bubbled through this solution for at least ten minutes or until the pH is lowered to 6.35. After carbon dioxide saturation, 1,000 I.U. of penicillin and 1,000 μg. of strepto-

From the Department of Animal Science and the College of Veterinary Medicine, University of Illinois, Urbana.

TABLE 1—Fertility Results of Individual Bulls with Semen Stored in Illini Variable Temperature Diluent at 7 C.

Age of sperm (da.)	Bull identification A		B		C		D		E		F	
	No. cows*		No. cows		No. cows		No. cows		No. cows		No. cows	
	bred	conceived	bred	conceived	bred	conceived	bred	conceived	bred	conceived	bred	conceived
1- 7	9	8(88.8%)	10	8(80.0%)	7	4(57.1%)	7	4(57.1%)	22	9(40.9%)	13	10(76.2%)
8-14	10	2(20.0%)	0	0	0	0	1	1(100.0%)	12	2(16.6%)	0	0
15-22	13	0(0.0%)	0	0	0	0	1	1(100.0%)	3	0(0.0%)	0	0
23-27	5	0(0.0%)	0	0	0	0	0	0	0	0	0	0
Approx. days progressive motility maintained	30		25		7		35		16		25	

*Based on 60- to 90-day nonreturn.

mycin per milliliter of solution are added. To this mixture, 110 ml. of fresh egg yolk is added and the container is tightly stoppered.

In this experimental study in which no more than 100 ml. of diluent was used at any given time, the preparation of the dilutor was simplified by storing a stock solution of the sodium and potassium salts, glucose, and sulfanilamide at 7 C.

The I.V.T. diluent was prepared by using 100 ml. of the stock solution, saturating with CO_2 gas, and then adding penicillin, streptomycin, and egg yolk in the appropriate amounts. The prepared diluent was stored at 7 C. in a tightly stoppered bottle.

Semen was obtained by electroejaculation. The semen and the freshly prepared diluent were allowed to adjust to approximately room temperature prior to mixing. The dilution rate was 1:5 to 1:10 and always exceeded a concentration of an estimated 50 million sperm per milliliter. The diluted semen was sealed in the appropriate number of 1.5-ml. glass ampules, slowly cooled to 7 C. over a period of two to two and one half hours, and stored at this temperature until used for insemination.

During storage in the I.V.T. diluent, sperm settled to the bottom of the ampules. Before insemination, the sperm were resuspended by gentle agitation of the ampule.

Diluted semen was used for insemination as long as the sperm exhibited progressive motility. Evaluations of test samples were carried out periodically by resuspending the sperm for microscopic examination at 37 C. It is important to allow sufficient time for the carbon dioxide to escape before evaluating the motility of the sample.

The test animals used for semen collections and inseminations were a part of the herds of cooperating beef cattle breeders within the state of Illinois.

The bulls used in this study were known fertile bulls, but the record of conception rates from natural or artificial service with other semen diluents was not available.

TABLE 2—Summary of Fertility Results with Semen Stored at 7 C. in Illini Variable Temperature Diluent

Age of sperm (days)	No. of cows bred	Cows pregnant* (No.)	(%)
1- 7	68	43	63.2
8-14	23	5	21.7
15-22	17	1	5.9
23-27	5	0	0.0

*Based on 60- to 90-day nonreturn.

RESULTS

The individual conception results (table 1) showed a considerable variation among bulls. In all cases, semen remained progressively motile for a longer time than that used for actual insemination.

Fertility results of semen obtained from the 6 different bulls used to inseminate 113 cows are summarized (table 2). Up to eight days of storage, the average conception rates were satisfactory (63.2%). A few pregnancies resulted with semen stored from eight to 14 days (21.7%). One pregnancy occurred with semen stored for 22 days (bull D, table 2).

DISCUSSION

A previous report[2] and data reported here indicate that satisfactory fertility rates can be maintained for approximately seven days with bull semen stored in the I.V.T. diluent. This is approximately two to three times longer than can normally be expected with the commonly used liquid semen diluents.

It was observed that there was a variation in the motility of stored semen samples when collected from different bulls. Semen from some bulls maintained progressive motility in storage for periods of less than one week; semen from other bulls, for as long as 35 days. This observation was further confirmed by laboratory studies wih semen from approximately 15 bulls whose semen was not used for insemination.

Even though spermatozoa remained motile in the I.V.T. diluent for up to 35 days when stored at 7 C., high conception rates were not maintained for more than one week. However, the several pregnancies reported with semen after 22 days' storage indicates that it may be possible to improve the diluent and extend its present value.

SUMMARY

Field studies were conducted to evaluate the fertility results of bull semen stored in Illini variable temperature diluent at 7 C. Bull semen remained progressively motile for seven to 35 days and was used for inseminations after storage from one to 27 days. There was considerable variation among bulls in the length of storage and rates of conception after storage.

A total of 113 cows was inseminated with semen from 6 different bulls. Up to seven days of storage, the conception rates averaged 63.2 per cent. A few pregnancies resulted with semen stored from eight to 14 days (21.7%). One pregnancy occurred with semen stored for 22 days.

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Effect of Storage on Semen.—Records from 71,098 first services of 60 bulls, at the Kansas Agricultural Experiment Station, show that the nonreturn rate decreases from 5 to 11 percentage units for each additional day of storage of the semen. The decline in fertility was least rapid in the winter but no greater in summer than in spring and fall.—*J. Dai. Sci. (July, 1958): 987.*

Sites of Formation of Gamma Globulin.—*Gamma* globulin is formed in the germinal centers of lymph nodes, in cells designated as "intrinsic" to distinguish them from medium and large lymphocytes, and from primitive reticular cells that occur elsewhere and do not produce *gamma* globulin.—*Vet. Bull (April, 1958): Item 1085.*

Tick Fever Virus in Rodents

Colorado tick fever virus has frequently been isolated from man and the Rocky Mountain wood tick (*Dermacentor andersoni*), the only tick incriminated. There has been serological evidence of natural infection in the Columbian ground squirrel but, for the first time, the virus has been isolated from mammals in nature.

When several persons developed tick fever, a number of rodents on the same Colorado ranch were shot or captured and examined. Of the 29 rodents, there was evidence of virus in 2 of 24 golden-manteled ground squirrels, 1 of 2 porcupines, and in a woodchuck; the virus was isolated from 3 of the 4.—*Science (Aug. 22, 1958): 413.*

The Role of Desert Rodents in Transmission of Tularemia.—An experiment with 11 desert rodents (mice, rats, squirrels, and chipmunks) indicated that those which could be induced to eat infective flesh contracted tularemia. The extent of carnivorism in such rodents has not been determined, but they may play an important role in the maintenance of this disease in nature and in the propagation of tularemia epizootics.—*Science (Aug. 15, 1958): 363.*

Nitrofuran Compound Efficiency

Twenty calves, at the Rhode Island Agricultural Experiment Station, were inoculated with a virulent culture of material from a calf that had died from scours. The 10 which were immediately treated, orally, with nifuraldezone compound showed no signs of scours. Of the 9 treated when scours appeared, 4 recovered and 5 died of the disease. One calf was not affected.

When furaldezone was fed to pigs at the rate of 10, 15, and 50 Gm. per ton of feed, they made greater weight gains than the controls, those on the 50-Gm. level making the highest daily gain. No adverse effects were noticed.—*Rhode Island Agric. (Summer, 1958): 11.*

An Antibiotic for Staphylococcus.—Among the many new antibiotics, one called "kanamycin" is active against pathogenic strains of Staphylococcus which are resistant to commonly used antibiotics. It is bactericidal, rather than bacteriostatic, and is therapeutically compatible with penicillin.—*Sci. News Letter (July 19, 1958): 40.*

Salmonellosis in Poultry and Poultry Processing Plants in Western Pennsylvania

DUANE BROBST, D.V.M.; JACK GREENBERG, B.A.; HORACE M. GEZON, M.D.

Pittsburgh, Pennsylvania

POULTRY AND POULTRY products represent an important part of the American diet. More poultry meat is consumed per capita than in any other country in the world, the estimate being 20 lb. in 1939 and 36.5 lb. in 1954.[7] Today, over 30 per cent of the reported outbreaks of food-borne diseases are associated with poultry and poultry products,[1] and this will probably increase as the production and usage of this food increase.

The types of Salmonella that frequently cause illness in man are found most commonly in poultry.[2,6] A total of 72 Salmonella organisms was isolated from the intestinal tracts of 48 of 214 chickens tested.[5] These findings are quite at variance with those of others[6] who found none in chickens sampled from the production lines of six different processing plants.

Florida workers[4] isolated no Salmonella organisms in 372 samples obtained from 129 chickens taken from the evisceration line of a processing plant. They concluded that healthy birds which come to slaughter are rarely infected. However, in a later period in their study, they isolated 196 Salmonella organisms from 1,244 birds, 17 from the environment of three chicken processing plants, and 147 from ducks and materials in a duck processing plant. *Salmonella typhimurium* was the prevalent type in both chickens and ducks although 21 different species of Salmonella were isolated from the former and four from the latter. These studies suggested that Salmonella may be disseminated from infected to uninfected birds during processing.

In Allegheny County, Pennsylvania, there is a relatively constant amount of salmonellosis in man, a large fraction of which is caused by Salmonella of animal origin. The source for most of these is obscure but it seems likely that, for the most part, they are not from human carriers. The role of poultry in the epidemiology of this disease deserves further investigation. In particular, it would be desirable to study the relationship between "cut-up" poultry and cold meats handled in the same display case and on the same chopping block by the same unwashed hands. If the eviscerated whole or cut-up poultry were contaminated with Salmonella, mechanical transfer of the organism to the cold meats would appear to be a real possibility.

As a preliminary, this study was carried out to determine the prevalence of Salmonella in the cloacal contents of poultry coming into this market as well as the carcasses of poultry processed in the area.

EXPERIMENTAL METHODS

Eight poultry processing plants not subject to federal inspection were investigated. They were all small plants where killing, defeathering, and eviscerating usually were done in one room. The holding batteries, where the poultry was stored, were in the same room.

Both the birds and the plant environment were sampled bacteriologically for the presence of Salmonella organisms. Cloacal swabs were obtained from poultry before or after slaughtering and abdominal cavity swabs after evisceration. The swabs were placed in 2 ml. of nutrient broth for transport to the laboratory. The surfaces of the defeathering machines and eviscerating tables were swabbed and water samples from the rinse bath and ice water vats, where the eviscerated birds were kept, were taken. Swab samples from the floors of the holding batteries also were obtained from several processing plants.

In the laboratory, the swabs were heavily streaked directly onto Salmonella-Shigella (SS) agar (Difco) and MacConkey agar (Difco). This swab was then placed in selenite F enrichment broth. After 18 to 24 hours' incubation at 37 C., typical nonlactose fermenting colonies were transferred to Kligler iron agar slants. If the original plates showed no growth, or confluent growth, or absence of typical colonies, the selenite broth culture was then streaked onto additional MacConkey and SS plates.

Subcultures that produced reactions in Kligler iron agar, which were typical of Salmonella organisms, were then tested on urease medium to eliminate Proteus organisms and then were characterized biochemically in dextrose, lactose, sucrose,

From the Allegheny County Health Department (Brobst), and Graduate School of Public Health (Greenberg and Gezon), University of Pittsburgh, Pittsburgh, Pa.

The authors thank Howard E. Reidbord and Bernard J. Ferraro for their assistance.

and salicin fermentation broth and by the indol reaction. Cultures exhibiting biochemical reactions typical of the Salmonella group were further identified by the slide agglutination technique, using polyvalent and group-specific antiserum. Final species identification was made through the Pennsylvania State Public Health Laboratory.

RESULTS AND DISCUSSION

From February to September, 1957, each of the eight poultry processing plants was visited approximately five times. During this period, 843 young chickens and 41 ducks, but no turkeys, were sampled (table 1). It is unfortunate that the latter were

TABLE 1—Isolation of Salmonella Species from Poultry Processing Plants in Allegheny County, 1957

Source	Specimens taken (No.)	Positive for Salmonella No.	Species
Chickens			
Cloaca	263	0	.....
Abdominal cavity	580	25	S. typhimurium
		1	S. kentucky
Ducks			
Cloaca	28	1	S. tennessee
Abdominal cavity	13	1	S. heidelberg
		1	S. anatum
Defeathering machine	8	0	.....
Water bath used after defeathering	15	3	S. typhimurium
Eviscerating table	20	0	.....
Rinse vat used after evisceration	10	0	.....
Ice water storage vats used after evisceration	16	0	.....
Fecal material from cages	37	1	S. typhimurium

not available since they probably would have been a rich source for Salmonella isolations.[3]

None of the 263 cloacal swabs from chickens was positive, while 26 of the 580 from the abdominal cavity were positive for Salmonella. This figure becomes more impressive when it is realized that all the isolations were obtained on the same day from the same small processing plant. On that day, a total of 67 swab specimens was obtained from eviscerated, 11-week-old chickens. These birds had been chilled in an ice water bath following evisceration and before being sampled. *Salmonella typhimurium* and *Salmonella kentucky* were isolated. In addition, *S. typhimurium* was isolated from three of five vats where birds were chilled prior to evisceration, but from none of the three vats used for chilling after evisceration.

The chickens killed on this day were from three poultry farms, each of which was visited, and cloacal swabs were obtained from 36 chickens and water samples from six water fountains—no Salmonella organisms were isolated from any of these specimens.

The processing plant was reinvestigated three weeks after the first isolation and 19 eviscerated chickens, 39 live chickens, the eviscerating table, and droppings from ten small holding cages were sampled. *Salmonella typhimurium* was found only in the droppings on the floor of one of the cages, while all other samples were negative for Salmonella.

It would be difficult to determine, in retrospect, how many chickens actually were carrying *S. typhimurium* in this apparent epidemic. It is reasonably certain that more than 1 bird was infected with *S. typhimurium* and at least 1 was infected with *S. kentucky*. This statement is true inasmuch as three different water baths used for holding defeathered, uneviscerated birds were positive for *S. typhimurium*, and the various bird samples came out of several vats.

The isolation of three different species of Salmonella (*Salmonella tennessee, Salmonella heidelberg, Salmonella anatum*) from a total of 41 ducks indicated that ducks in this area were a reservoir for a variety of Salmonella species. If this small sample is representative, it also indicates that they are frequently infected. The three isolations were made in different plants, at different times in the testing period, and from ducks from different sources. *Salmonella anatum* and *S. heidelberg* were obtained from eviscerated ducks which were in vats of ice water. No other isolations were made from samples of this ice water or from other poultry in the same vats. This may indicate that contamination is not a common problem or it may merely reflect sampling inefficiency.

The conclusion that can be drawn from this study is that Salmonella is present in the poultry coming into this market area and that, potentially, these are a serious menace not only to those who handle these birds but also to the families that receive them. Further studies are needed to determine whether or not the chopping block, the butcher's hands, or subsequent contamination of uncooked meat products play

an epidemiological role in food-borne Salmonella infections.

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Disseminated Coccidioidomycosis Cured with Amphotericin B

Treatment of disseminated coccidioidomycosis has been unsatisfactory. Of the new antifungal antibiotics, nystatin has seemed beneficial in a few cases. Amphotericin A and B have shown antifungal activity when given orally or parenterally.

A woman who, after a vacation in Arizona, had suffered with disseminated coccidioidomycosis for ten years, with development of bone and muscle lesions, had not been benefited by various treatments. When given amphotericin B (1 Gm., 4 times daily) orally, her recovery was definite and rapid. She seemed completely recovered in three months but this therapy was continued for 14 months. It was well tolerated with no untoward effects.—*J. Am. M.A. (May 24, 1958): 463-466.*

Oral vs. Injectable Penicillin.—Since allergic manifestations are less frequent in patients given penicillin *per os,* a study was made of penicillin blood levels in adult men, following either intramuscular injections of penicillin G or administration *per os* of penicillin V. Approximately twice the amount of the latter was needed to equal a given amount of the former.—*Antibiotics and Chemother. (March, 1958): 143.*

Coccidioidomycosis—Report of a Disseminated Case in a Dog

W. P. BLAKE, D.V.M.; J. W. HUBBARD, D.V.M.; J. MICUDA, D.V.M.

Phoenix, Arizona

Here in the southwestern states, coccidioidomycosis (valley fever), a systemic fungus infection due to *Coccidiodes immitis,* probably occurs in most species of mammals. In this enzootic area,[1] the more they look for the disease in animals and man, the more they find it. The morbidity may be high but mortality is low.

Fig. 1—Ventrodorsal radiograph of the pelvis of a dog, showing an extensive lesion (arrow) in the pelvic bones due to Coccidioides immitis infection.

The disease occurs in two forms, primary and disseminated. In the primary form, the lesions are confined to the respiratory tract while, in the disseminated form, they also occur elsewhere, most commonly in the bones.

It is estimated that a high percentage of persons living in certain parts of the area for five years will have contracted primary coccidioidomycosis[2] and about 1

Drs. Blake, Hubbard, and Micuda are small animal practitioners in Phoenix, Ariz.

The authors thank Dr. L. D. Kintner, School of Veterinary Medicine, University of Missouri, for his assistance on the histopathology of the case report.

case in 500 will become disseminated. It is believed that a higher percentage of cases become disseminated in dogs, as this form is commonly seen in dogs 1 to 2 years of age. Recently, we had a disseminated case in a pup 4 months old. We have not seen a case, or a case report, of the disease in a cat.

The disease is chronic and the clinical signs are: a persistent cough, emaciation, variable appetite, diarrhea, slight fever, plus bone lesions in the disseminated cases. One of the most dramatic bone lesions we have seen is shown in figure 1. Other visible bone lesions of the shoulder and toes were also present in this dog. In the primary form, "valley fever" can easily be mistaken for distemper or so-called "kennel cough."

standpoint, have recently been published on coccidioidomycosis in dogs.[3,4] To the cases they report, we would like to add the following case because the lesions and the history were different than usual.

CASE REPORT

A female Boxer, 3 years old, was brought to our hospital in an emaciated condition, with the hindquarters the most atrophied. Two months previously, at another clinic, a radiograph of the hindquarters showed what was believed to be a fractured hip. There had been no improvement in her condition and emaciation was gradually becoming evident. At the time of entry to our hospital, a radiograph (fig. 2) was taken. The lesion shown in figure 2 was the most important.

Fig. 2—Lateral radiograph of the dog in this case report, showing a lesion in the area of the fourth lumbar vertebra (arrow).

Our success in treatment, to date, has been disappointing. As in human cases, drugs have been of little, if any, value.

It is believed that the disease is not transmitted directly from animals to man or from animal to animal. The fungus is thought to be able to complete its life cycle in nature, completely independent of animals. There is a slight possibility that the organism may be passed from the animal's body—usually with the feces—then when infective arthrospores have developed, they may become airborne and transmit the disease.

Two excellent reports, from a clinical

The tentative diagnosis was coccidioidomycosis and a possible fracture with poor healing. Since the prognosis was unfavorable, the dog was euthanatized, sections of the lesions were sent to the laboratory, and our diagnosis of coccidioidomycosis was confirmed.

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Anti-Hog Cholera Serum – An Adequate Reserve Needed

The movement to eradicate hog cholera, the most lethal livestock disease present in North America, seems to have lost some of the encouraging momentum it had in 1957.

To eradicate this "public enemy No. 1" for swine requires simply that the single etiological factor—hog cholera virus—be eliminated. The long recognized sources of the virulent virus are: affected swine, bottled virulent (vaccinating) virus, and infected, refrigerated, raw pork, usually from swine slaughtered in the incubative stage of the disease. Recently (p. 404), it has been shown that the virus can also survive in the ova of lungworms recovered from hogs affected with cholera, and through at least one generation of that parasite. While this intriguing finding indicates that there are reservoirs, the virus still has to originate from a sick hog.

This *virus-intermediate host-host* relationship theoretically may be comparable to that in swine influenza but, practically, there are marked differences. For instance, the influenza virus may originate from hosts other than swine, possibly from man; swine "flu" is seasonal and fairly predictable whereas cholera is not; and there are many farms and larger areas, such as in Canada, where swine are raised regularly yet when cholera has been eliminated it has not reappeared for many years, if ever. Thus, while of academic interest, the finding of virus in the swine lungworm probably merely increases the challenge for the eradication of cholera.

The Role of Anti-Hog Cholera Serum

The most significant result of the finding of a possible intermediate host for the virus of hog cholera is that it increases the need for establishing adequate facilities for quickly "extinguishing the fire," if hog cholera should reappear after the common sources of the virus are removed.

The all important cholera "extinguisher" is anti-hog cholera serum. Therefore, a critical survey of the reserve supply of serum is imperative.

Since 1926, the last time the serum supply was exhausted during a cholera epizootic, the federal authorities and the serum producers have done a commendable job of maintaining an adequate supply of this serum, by means of an agreement whereby each producer, on May 1 each year, had an inventory of serum equal to 40 per cent of the quantity he sold during the previous year. (The date on which the 40% must be on hand was recently changed so a producer may meet this requirement at an agreed time between January 1 and May 1.) However, because of the marked decline in the vaccinal use of virulent virus (100,575,000 cc. in 1951; 7,857,000 in 1957-1958), the need for serum has also been greatly reduced. Although the swine population has changed little, serum produced has declined from 1,659,000,000 cc. in 1951 to only 573,000,000 cc. in the 12 months ending in June, 1958.

Federal Guarantee Needed

The reason for recent federal concern over failure of many owners to have their swine immunized is apparent when we realize that there is only about 36 per cent as much serum and at least 20 per cent more cholera-susceptible swine than prior to the introduction of modified virus vaccines in 1951. If a widespread epizootic of cholera were to occur, and such is possible as long as virulent virus is used in vaccinating, the result could be exhaustion of the serum supply and a tragic loss of swine.

To summarize, the shrinking demand for anti-hog cholera serum is due to: (1) a greatly reduced use of virulent virus in vaccinating; (2) the smaller dose of serum required when used with modified virus vaccines; (3) the relative increase in the use of inactivated virus vaccines which require no serum; and (4) the smaller number of swine vaccinated because of the declining incidence of the disease, which presumably results from the decreased use of virulent virus in vaccinating and from feeding of garbage only after it is cooked.

If a repetition of the tragic experience of 1926 is to be avoided, a serum reserve of considerably more than 40 per cent of the previous year's production may be needed. Since no private industry can be expected to assume such a burden, it would seem that the federal government must guarantee the serum producer against losses if serum produced to meet the increased reserve requirement becomes outdated and has to be discarded.

Current Literature

ABSTRACTS

A Septicemic Disease of Lambs

A gram-negative, nonmotile, nonspore-bearing, microaerophilic bacillus was recovered from lambs dying from acute septicemic disease. These lambs rarely were seen sick and, except for stiffness, depression, and fever, clinical signs were minimal. All losses were confined to a single flock; the deaths continued over a three-month period, with a final flock mortality of 20 per cent. Except for several animals which appeared to respond to streptomycin therapy, all affected animals died. Gross lesions consisted of multiple subcutaneous, subserosal, and muscular hemorrhages, and focal hepatic necrosis. Microscopically, bacterial thrombi were seen associated with the muscle hemorrhages and the liver necrosis and produced a focal suppurative myositis and hepatitis. Arthritis developed in those animals that survived 24 hours or more.

The organism could be recovered regularly from the livers, lungs, spleens, muscles, and joints of these animals but required mediums enriched with blood or tissue fragments and grew best in an atmosphere of 10 per cent CO_2. The name *Hemophilus agni* (nova species) is proposed for the bacterium.

When inoculated parenterally, the organism was pathogenic for lambs but did not kill mice, guinea pigs, or rabbits.—[*Peter C. Kennedy, Lillian M. Frazier, Gordon H. Theilen, and Ernst L. Biberstein: A Septicemic Disease of Lambs Caused by Hemophilus Agni (New Species). Am. J. Vet. Res., 19, (July, 1958): 645-654.*]

BOOKS AND REPORTS

Animal Behaviour

This periodical, formerly the *British Journal of Animal Behaviour*, is now the official publication of the British Association for the Study of Animal Behaviour and its American counterpart, the Animal Behaviour and Sociobiology Section of the Ecological Society of America. It includes papers on all aspects of animal behavior and related subjects and is published biennually by Balliere, Tindall and Cox, Ltd., 7 and 8 Henriettta St., W.C. 2, London. The annual subscription in the United States is $8.00; in the United Kingdom, 50s.

Dairy Cattle Breeding in the Tropics

Three points seem to account for the failure of livestock production to keep pace in the tropics with production in other lines of agriculture: (1) marketing systems are not adequate for highly perishable products; (2) an "almost inherent aversion to the consumption of milk"; and (3) industrial development has been slow, so that cattle are kept as work animals, with milk production a secondary consideration.

The analysis continues with a compilation of available information regarding such subjects as age at first calving, variation of yield with age, composition of milk, mortality and replacement, and inheritance of economic characters. A chapter is devoted to each subject. Methods of improvement are then discussed.

In the Foreword, Dr. Jay L. Lush urges a study to try to learn if heavy production of milk is compatible with adaptation to the tropics, whether work and dairy production are antagonistic, and whether separate breeds or specific crosses are required.

These considerations are important to the geneticist. To practicing veterinarians it should serve as a challenge to observe and to analyze more closely some of the aspects of dairying which we are inclined to take for granted.—[*Dairy Cattle Breeding in the Tropics. By P. Mahadevan. 88 pages; illustrated. Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England. 1958. Price about $2.10.*]—R. C. KLUSSENDORF.

Microbiology and Contagious Diseases

This second edition, revised and supplemented, discusses microbiology in two parts — general and specific.

The general part deals with the nomenclature of microorganisms, and discusses their structure, mutation, reproduction, sporulation, motion, nutrition, biochemical capacity, their distribution in nature, and symbiosis and antibiosis. Chapters are devoted to the problems of infection, immunity, and chemotherapy of the various infections discussed. A special chapter deals with the diagnosis and control of infectious diseases.

The specific part of the text discusses characteristics of the most important bacteria, fungi, and viruses. The chapter pertaining to fungi has been especially well worked out in detail, and a good key to their determination has been added. In final chapters, some special infectious diseases have been described.

This clearly written new edition contains a wealth of good and descriptive illustrations and is supplemented with many comprehensive tables. It is a fundamental contribution to veterinary medicine, and may serve as a textbook for students and practitioners.—[*Microbiology and Contagious Diseases (Mikrobiologie und Allgemeine Seuchenlehre). 2nd ed. By M. Rolle. 448 pages; 105 illustrations; 31 tables. Ferdinand Enke, Stuttgart, Germany. 1958. Price $12.30.*]—F. KRAL.

Pig Carcass Evaluation

This summary of the various methods used in evaluating pig carcasses, with its excellent bibliography, is of particular value to swine producers and processors and buyers. It is of little value to veterinarians unless they should come under one or more of these categories. — [*Pig Carcass Evaluation. By G. Harrington. Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England, 1958. Price 15s.*]

THE NEWS

More About the Sixteenth International Veterinary Congress in Madrid

The preliminary program of the XVIth International Veterinary Congress to be held in Madrid, Spain, from May 21 to 27, 1959, has been received from the Organizing Committee there (*see* the JOURNAL, June 1, 1958, p. 500 and Sept. 1, 1958, p. 282).

In addition to an outline of the scientific programs of the two plenary (general), five sectional, and 19 subsectional meetings, the preliminary program includes the following information.

The opening session will take place on Thursday morning, May 21; the final session on Wednesday afternoon, May 27. The headquarters of the Organizing Committee where delegates will register will be in the Faculty of Medicine (School of Dentistry) at University City, beginning on Wednesday, May 20.

Participation and Fees.—Veterinarians from all countries of the world may register as members and should apply through their respective national committees.

For "Ordinary" Members, (regular) the registration fee is 600 pesetas ($15.00); for Associate Members (students and others), 300 pesetas ($7.50); for subscribers (those not attending the Congress but wanting its two-volume printed proceedings), the cost is 400 pesetas ($10.00).

The deadline for regular registration is Dec. 31, 1958. Those who register and pay by that date will receive the first volume of the Proceedings (papers) a month before the Congress opens; those who apply or remit after that date will receive the first volume when they register at the Congress.

The second volume of the Proceedings will comprise discussions, short papers, and the resolutions adopted by the Congress. This volume will be sent to members shortly after printing.

Exhibits.—Appropriate committees of the Madrid Congress are arranging for exhibits of scientific and industrial materials (biological, pharmaceutical, and livestock products), also books, pictures, and other items related to veterinary medicine.

This XVIth International Veterinary Congress will coincide with the IIIrd International Agricultural Fair and the National Livestock Show which will open in Madrid on May 23, 1959. This will provide opportunity for Congress members to see outstanding examples of Spanish livestock.

An "excursion interlude" for all Congress members will be provided on Sunday, May 24, to the "Escorial," one of the most remarkable places in the world, located 31 miles northwest of Madrid, and to the "Valle de los Caidos," and also to a bullfight.

During the Congress, participants will also have an opportunity to visit historical places of interest in and around Madrid.

Tours for American Participants.—There has been a large response to the announcement of tours arranged by the U.S. Committee in collaboration with the Travel Service Bureau (*see* the JOURNAL, Sept. 1, 1958, p. 282). Judging from the number of inquiries already received, it appears that a large number of veterinarians and their wives will take advantage of the opportunity for group travel to Madrid and for post-Congress visits to various points in Europe as provided in the four-choice tour leaflet mailed recently.

Anyone who failed to receive this leaflet can obtain one from the AVMA office, 600 S. Michigan Ave., Chicago 5, Ill.; or by writing to the Travel Service Bureau, Inc., 32 Dedham Ave., Needham, Mass., attention Mr. Nelson M. Jost.

National Science Foundation Makes 642 Grants in Support of Science

The National Science Foundation has announced that 642 grants totaling $12,162,513 have been awarded during the quarter ending June 30, 1958, for the support of basic research in the sciences, for conferences in support of science, for the exchange of scientific information, and for the training of science teachers.

This is the fourth group of awards to be made during the fiscal year 1958. During the first three quarters, awards totaled approximately $25.2 million. In this last group of grants, awards were made to institutions and scientists in 48 states and in Bermuda, Canada, Hawaii, Lebanon, Puerto Rico, and Switzerland.

The research fields included are astronomy, chemistry, biology, physics, the earth sciences, engineering sciences, mathematical sciences, and the social sciences.

AMONG THE STATES AND PROVINCES

California

Alameda-Contra Costa Association.—The Alameda-Contra Costa V.M.A. met at Pland's Restaurant in Oakland, on Aug. 27, 1958, for a dinner meeting.

The program chairman, Dr. Irving Roberts (MSC '14), planned the evening around the

small animal practitioner. The report of the executive meeting held August 18 was also presented.

Once again, the association reminded its members of its decision made at their July 30 meeting to hold regular meetings monthly, in the future, while retaining the last Wednesday of the month as usual.

s/GEORGE H. MULLER, *Secretary.*

Colorado

State Association.—The Colorado V.M.A. held its fifty-third annual convention at the Antlers Hotel in Colorado Springs, Sept. 5-6, 1958.

On Sept. 5, Dr. R. E. Rebrassier, president of the AVMA, addressed the convention during the afternoon session; at the banquet held the same evening, Dr. A. C. Herzberger, Colorado Springs, introduced the president of the association, Dr. Norman W. Eyl, Montrose, and the governor of the state, Steve McNichols.

Officiating at the small animal section in both the morning and afternoon sessions were: Drs. Phylis Mullenax, Evergreen; Edward Swena, Wheat Ridge; Lee Phillips, Lakewood; and Richard Copeland, Denver.

Chairmen of the four sessions in the large animal section were: Drs. Sterling Clark, Fowler; Robert Bartlett, Castle Rock; Harry Schaulis, Denver; and Herman Grueter, Denver.

The various panel discussions alternated between a "clinical-pathological conference" to "collections and credit" and "drug inventory and selection" to "bovine reproductive problems." Over 48 veterinarians participated in the convention program.

Once again, the Colorado V.M.A. engaged a public relations firm to assist in providing information on the meeting to the newspapers, TV stations, and radio stations, in an attempt to stimulate the interest of the general public in the profession. Local releases were also sent to the hometown papers of all the veterinarians who registered.

District of Columbia

Dr. McCoy, Jr., Joins Meat Inspection Staff of the Washington, D.C., Office.—Dr. R. P. McCoy, Jr., has been transferred to the program development staff, Meat Inspection Division of the U.S.D.A., at Washington, D.C., from the New York City station where he had served as circuit supervisor.

Since entering the service in September, 1953, Dr. McCoy has also served in meat inspection work in Denver, Colo.; Boise, Idaho; Purcellville, Va.; and Mercury, Nev. In Mercury, he worked temporarily with the Atomic Energy Commission.

Dr. McCoy's new assignment is in the office of the Chief Staff Official for Labels and Standards of Identity.

s/C. H. PALS, *Associate Director, U.S.D.A., ARS, Meat Inspection Division.*

Kentucky

State Association.—At the annual meeting of the Kentucky V.M.A. held in Louisville, July 21-22, 1958, the following officers were elected for the ensuing year: Drs. T. S. Maddox, Owensboro, president; O. H. Holler, Madisonville, first vice-president; Sherman Glass, Maysville, second vice-president; and L. S. Shirrell, Frankfort, secretary-treasurer.

The winter meeting of the association is scheduled to be held at the Irvin S. Cobb Hotel in Paducah, Ky., December 8 and 9.

s/L. S. SHIRRELL, *Secretary-Treasurer.*

Minnesota

Dr. Kernkamp Addresses the Society of Sigma Xi.—Dr. H. C. H. Kernkamp (OSU '14) addressed the annual initiation and dinner meeting of the Minnesota Chapter of the Society of Sigma Xi, in his capacity as retiring president, on the subject of veterinary education.

Stressing that a veterinary curriculum does not differ greatly from a medical curriculum, Dr. Kernkamp elaborated on the broad area of study that a veterinary student must cover.

Dr. Kernkamp also gave special emphasis to veterinary education at the University of Minnesota, tracing the various attempts to establish a veterinary college at the University.

s/ALVIN F. WEBER, *Correspondent.*

New York

State Society.—The New York State Veterinary Medical Society held its sixty-seventh annual meeting at the Concord Hotel, Kiamesha Lake, N.Y., on Sept. 3-6, 1958. Dr. Leo A. Wuori, Briarcliff Manor, was general chairman of the meeting.

Dr. James D. Sweet, president of the society, presented a message from Governor Harriman at the general session, September 4, and in addition to other talks presented, Dr. T. H. Elsasser, director of cancer research and associate surgeon at Christ's Hospital, Jersey City, N.J., discussed "A New Aspect of Cancer Research."

The third day of the meeting was divided into small and large animal sessions. Drs. R. W. Kirk and John Bentinck-Smith, both of Ithaca, moderated a panel discussion on "Thoracic Symptoms" during the morning session and Dr. J. S. Proper, Honeoye Falls, conducted a panel discussion on "Current Problems in Large Animal Practice" in the afternon session.

Among the many subjects presented, Dr. C. L. Blakely, Boston, Mass., delivered an address on surgery and Dr. Ralph Alley, Albany, spoke on the "ABC's of Open Heart Surgery."

Thirty-two local exhibitors and six local associations were represented at the meeting.

Quebec

French Government Bestows M.S. Degree on Canadian.—Dr. Rene Veilleux, D.V. (Paris), M.Sc. (Paris), who graduated from the School of Veterinary Medicine at St. Hyacinthe in 1955, has recently returned from three years of postdoctoral study abroad.

His extensive studies were made possible through a scholarship from the Agricultural Research Council of the Province of Quebec, grants from the French government, and from two pharmaceutical companies.

Dr. Veilleux also visited the veterinary schools at Lyon, Lisbonne, Hanover, Munich, Lourdes, Cambridge, Copenhagen, and Stockholm.

s/JACQUES SAINT-GEORGES, *Secretary.*

U. S. GOVERNMENT

Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U.S.D.A. are reported as of June, July 29, and Aug. 4, 6, 8, & 27, 1958.

TRANSFERS

Grant Albright, from Salem, Ore., to Madison, Wis.
Bert R. Allen, from Indianapolis, Ind., to Frankfort, Ky.
D. Warner Anderson, from Waterloo, Iowa, to Chicago, Ill.
William R. Beasley, from Lumberton, N. Car., to Batesburg, S. Car.
C. Creede Bickley, from Reno, Nev., to Pierre, S. Dak.
Alexander Bruyns, from Sioux Falls, S. Dak., to Bakersfield, Calif.
William B. Buck, from Columbia, S. Car., to Fort Worth, Texas.
James R. Collier, from Huron, S. Dak., to Muncie, Ind.
Augusto L. Cruz, from Waterloo, Iowa, to Omaha, Neb.
Robert L. Dicman, from Muncie, Ind., to Austin, Minn.
Paul G. Eischen, from Crawfordsville, Ind., to Madison, S. Dak.
Winton G. Evans, from St. Paul, Minn., to Springfield, Ill.
Loyal H. Fisk, from Caldwell, Idaho, to El Centro, Calif.
Norman L. Garlick, from Sacramento, Calif., to Washington, D.C.
Harold L. Geick, from St. Joseph, Mo., to Indianapolis, Ind.
Walter T. Gier, from Los Angeles, Calif., to Albuquerque, N.M.
Lawrence F. Good, from Jefferson City, Mo., to Salt Lake City, Utah.
Oren L. Kelsey, from Topeka, Kan., to Raleigh, N. Car.
Robert F. Kieldsen, from Fort Worth, Texas, to Milwaukee, Wis.
Charles Hackenberg, Jr., from Newark, N.J., to New York, N.Y.
Charles Haggar, from Worthington, Minn., to Des Moines, Iowa.
Fleetwood Hines, from Raleigh, N. Car., to Montgomery, Ala.
William S. Houk, from Denver, Colo., to St. Joseph, Mo.
Robert P. McCoy, Jr., from New York, N.Y., to Washington, D.C.
Norvan L. Meyer, from Springfield, Ill., to Des Moines, Iowa.
Eugene E. Moon, from Springfield, Ill., to Jackson, Miss.
Alfred F. Nolan, from Dallas, Texas, to El Dorado, Ark.
Eric H. Nordstrom, from Albuquerque, N.M., to Lincoln, Neb.
Keith E. Peterson, from Green Bay, Wis., to Denver, Colo.
Robert L. Pyles, from Pierre, S. Dak., to Albuquerque, N.M.
Leslie J. Rafoth, from Chicago, Ill., to Washington, D. C.
Herman J. Schick, from Austin, Minn., to Los Angeles, Calif.
Earl W. Stapp, from Birmingham, Ala., to Bartow, Fla.
Hyman M. Steinmetz, from Baltimore, Md., to Waterloo, Iowa.
Lloyd F. VanGorder, from Jefferson, Mo., to Washington, D.C.
Elwood E. Wedman, from St. Paul, Minn., to Washington, D.C.
Gilbert H. Wise, from Columbus, Ohio, to Sacramento, Calif.

RETIREMENTS

George A. Ahrens, Eau Claire, Wis.
Albert R. Kincaid, Fayetteville, Ark.
Soren C. Sorenson, El Centro, Calif.
Lee W. Stevens, Austin, Minn.

DEATHS

Rudolfs Mance, Seattle, Wash.

STATE BOARD EXAMINATIONS

Interested persons can obtain information about applications, fees, deadlines for filing applications, and exact time and place of examinations of the respective boards by writing to the persons whose names and addresses are given below.

BRITISH COLUMBIA—November, 1958 (usually end of the second week; Vancouver. G. L. Stovell, British Columbia Veterinary Association, 3187 West 43rd Ave., Vancouver 13, secretary.

NEW YORK—Next written examination will be held Dec. 2-5, 1958, at New York, Albany, Syracuse, and Buffalo; the practical examination will be given on Nov. 14, 1958, at Ithaca. James O. Hoyle, 23 South Pearl St., Albany 7, secretary, State Board of Veterinary Medical Examiners.

TEXAS—Next licensing examinations will be held Jan. 14-16, 1959; Austin. The completed application must be received in the board office not later than 30 days before the examination date. Mr. T. D. Weaver, 207 Capital National Bank Building, Austin 16, executive secretary, State Board of Veterinary Medical Examiners.

DEATHS

Star indicates member of AVMA

★**Edwin B. Ackerman** (AVC '91), 89, Huntington, L.I., N.Y., died sometime in the first part of 1958.

Dr. Ackerman was placed on the Honor Roll of the Association in 1942. He had been retired from practice at the time of his death.

Victor Ballou (UP '16), 72, Lancaster, Pa., died Aug. 3, 1958, after an illness of 11 months.

Dr. Ballou served as veterinarian in charge of ice cream inspection for the Lancaster City Health Department for 21 years, and also worked as meat inspector.

He is survived by his widow, Grace H. Davison Ballou, two sons, and two grandchildren.

Lawrence G. Clark (KCV '07), 75, Los Angeles, Calif., died Aug. 10, 1958, at his home.

Dr. Clark practiced veterinary medicine for 40 years in Los Angeles. He was on the State Board of Veterinarian Examiners under three Governors, on the board of the Republic Federal Savings and Loan Association, and city veterinarian for five years.

Survivors include his widow, Emma, one daughter, two brothers, and one sister.

Egbert S. Conklin (MSC '40), 43, Emery, S. Dak., died Aug. 17, 1958, as a westbound North Coast Limited train of the Northern Pacific Railway hit the automobile which he was driving, killing him instantly.

The train, composed of 15 cars and three engines, had no chance to slow down before the impact. The train dragged the car for nearly a half a mile before it stopped.

★**Julius W. Herbott** (UP '12), 68, Philadelphia, Pa., died suddenly June 9, 1958.

Dr. Herbert operated a small animal hospital for 35 years and worked for the city of Philadelphia for seven years. He is survived by his widow, Helen Moyer Herbott.

James C. King (STJ '23), 73, Hopkinsville, Ky., died July 27, 1958, after an illness of two years.

Dr. King practiced veterinary medicine for four years in Providence, Ky., before moving to Hopkinsville. He was awarded a life membership in the Kentucky Veterinary Medical Association upon completion of his 25 years' membership in the association. Dr. King was a member of the Baptist Church and the Masonic Lodge.

He is survived by his widow, Katherine S. King, one son, three sisters, and two brothers.

Andrew J. Malmas (ONT '16), Edmonton, Alta., Can., died in a hospital in Edmonton on May 26, 1958, after a two months' illness.

Dr. Malmas practiced in Didsbury and Camrose before moving to Edmonton in 1936. He is survived by his widow, two daughters, two brothers, and one sister.

James R. Renfrew (GR '11), Pasadena, Texas, died July 13, 1958, after an illness of many years.

Dr. Renfrew is survived by his wife and sister.

• • •

Other Deaths Reported.—The following deaths have been reported. The usual information for an obituary was not supplied.

Harmon C. Deane (COR '12), Ithaca, N.Y.

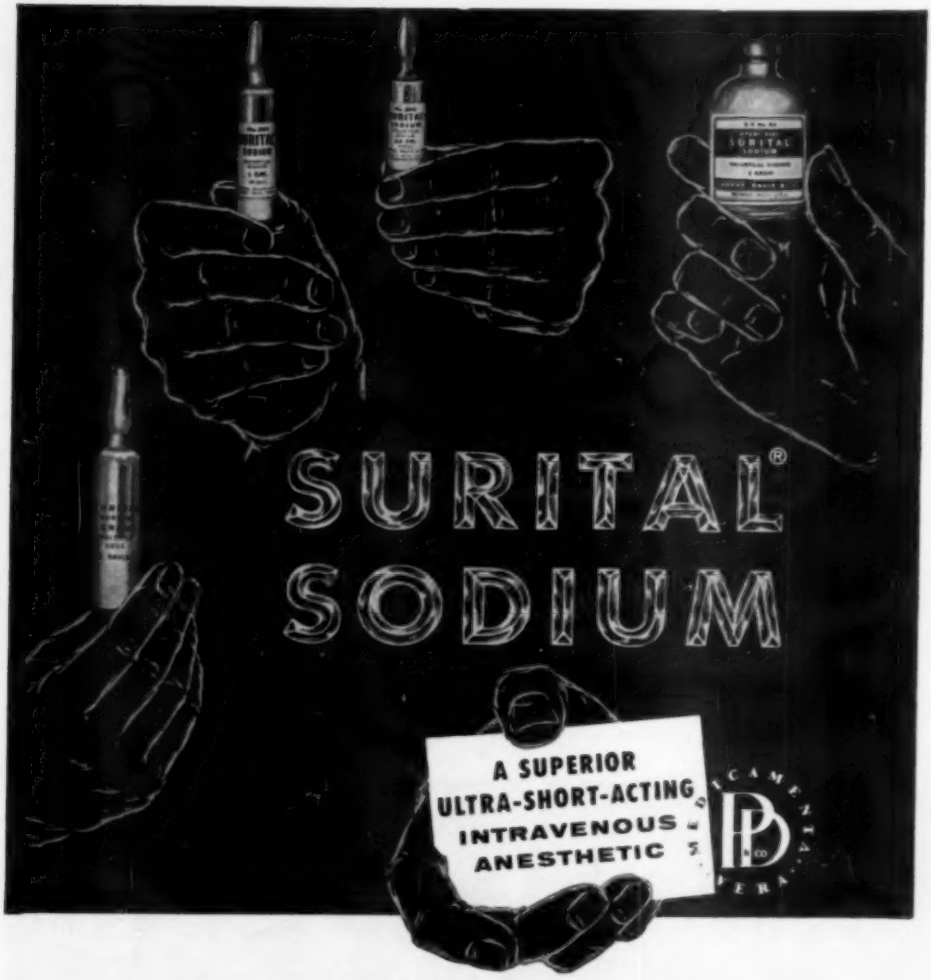
Roy C. Hartman (COR '14), 69, Pulaski, N.Y.

Eugene M. Joslin (ONT '08), Perry, Mich., died on Nov. 11, 1957.

Harold B. McMurray (COR '24), 64, Owego, N.Y.

W. A. Nannery, West Roxbury, Mass., died sometime prior to July in 1958.

Robert L. Rogers, Jr. (TEX '25), Fort Worth, Texas, died May 5, 1958.



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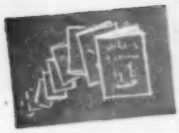

PROFESSIONAL LITERATURE AVAILABLE ON REQUEST

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WOMEN'S AUXILIARY

President—Mrs. E. A. Woelffer, 115 Woodland Lane, Oconomowoc, Wis.

Secretary—Mrs. A. W. Eivers, 1745 S. 13th St., Salem, Ore.

Convention Highlights.—Our many members and friends, as well as the weather, made the Philadelphia convention a success that will linger long in our memories.

At the Opening Session of the AVMA Ninety-Fifth Annual Meeting, the Women's Auxiliary was ably represented by our president, Mrs. Lewis H. Moe, who extended greetings and spoke on the aims and accomplishments of our organization.

On Tuesday morning, August 19, a breakfast for the delegates, officers, and past presidents of the Auxiliary to the AVMA preceded the meeting of the House of Representatives. The meeting was called to order at 9 a.m. by Mrs. E. A. Woelffer, then president-elect and chairman of the House of Representatives. Dr. Armistead, president of the AVMA, addressed the group on the value of the Women's Auxiliary to the veterinary profession. Nearly all of the affiliated state, regional, and provincial auxiliaries were represented.

The revision of the constitution and bylaws; which has been under consideration for the past three years, was adopted. Action was taken to grant life membership to those who have belonged to the Auxiliary for 40 years. Also adopted was the 1958-1959 proposed budget of $10,000. Mrs. Frederick Schneider, Philadelphia, Pa., a charter member of the Auxiliary, presented a medal which was used in the early years of our organization, and which is to be placed with our historical records.

The Auxiliary Workers' Conference on Wednesday morning was well attended. Specific topics such as the *AVMA Auxiliary News*, complimentary membership, loan fund, and the 1959 honor roll were discussed. Also under discussion were the subjects of parliamentary procedure, and aids to auxiliary and public relations media. That there is much interest in our projects was indicated by the many questions asked by those in attendance.

The annual luncheon for women attending the convention was held Wednesday at 12:30 p.m. in the Grand Ballroom of the Sheraton Hotel. Mrs. Raymond C. Snyder, co-chairman and president of the Auxiliary to the Pennsylvania State Veterinary Medical Association, gave the address of welcome. We were honored with the presence of guests from South America, the Panama Canal Zone, Puerto Rico, Hawaii, and Australia. The Bonwit Teller Store of Philadelphia presented a fashion show for our enjoyment.

Wednesday evening at Convention Hall, the new officers of the AVMA and the officers of the Women's Auxiliary were installed. The

The Women's tea held in the Grand Ballroom of the Sheraton Hotel, Philadelphia, on Monday, August 18, during the AVMA Convention.

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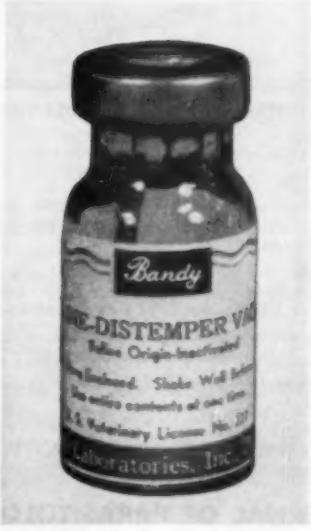

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First Vice-President—Mrs. James I. Cornwell, Asheville, N. Car.

Second Vice-President—Mrs. T. S. Maddox, Owensboro, Ky.

Third Vice-President—Mrs. S. F. Scheidy, Bryn Mawr, Pa.

Secretary—Mrs. Austin W. Eivers, Salem, Ore.

Membership Secretary—Mrs. C. M. Rodgers, Blandinsville, Ill.

Treasurer—Mrs. John D. Stevens, Sequim, Wash.

Highlights of the convention were not confined to the business sessions alone. Among other social functions planned for the women was the tea and reception held on Monday afternoon, August 18, in the Grand Ballroom of the Sheraton Hotel. That same afternoon, women golf enthusiasts participated in the tournament held at the Aronimink Golf Club. On Tuesday, the women enjoyed a tour of Philadelphia where they visited Independence Hall and other historical points of interest. Wednesday evening, Auxiliary members joined their husbands for the installation of officers, an excellent floor show, and the president's reception and dance.

s/(Mrs. S.F.) Henrietta K. Scheidy,
Third Vice-President

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JOURNAL OF PARASITOLOGY

U.S. Bureau of Animal Industry, Zoological Division
Beltsville, Maryland

COMING MEETINGS

Eastern Iowa Veterinary Association, Inc. Annual meeting. Hotel Roosevelt, Cedar Rapids, Oct. 16-17, 1958. F. E. Brutsman, Traer, Iowa, secretary-treasurer.

Texas Veterinary Medical Association. Annual meeting. Stephen F. Austin Hotel, Austin, Oct. 19-21, 1958. Paul B. Blunt, 710 Maverick Bldg., San Antonio, secretary.

Illinois, University of. Annual Illinois veterinary conference and extension short course for veterinarians. College of Veterinary Medicine, Urbana, Oct. 23-24, 1958. L. E. Boley, 311 W. William St., Champaign, Ill., chairman.

Southern Veterinary Medical Association. Annual meeting. Claridge Hotel, Memphis, Tenn., Oct. 26-30, 1958. A. A. Husman, P.O. Box 91, Raleigh, N. Car., secretary.

American Public Health Association. Annual meeting. Kiel Auditorium, St. Louis, Mo., Oct. 27-31, 1958. B. F. Mattison, M.D., 1790 Broadway, New York 19, N.Y., executive secretary.

Interstate Veterinary Medical Association. Annual meeting. Hotel Martin, Sioux City, Iowa, Oct. 30-31, 1958. D. W. Rubel, 3209 38th St., Sioux City, secretary.

United States Livestock Sanitary Association. Sixty-second annual meeting. Hotel Deauville, Miami Beach, Fla., Nov. 4-7, 1958. R. A. Hendershott, secretary-treasurer.

Mississippi Valley Veterinary Medical Association. Annual meeting. Père Marquette Hotel, Peoria, Ill., Nov. 5-6, 1958. W. P. Hendren, Carthage, Ill., secretary-treasurer.

Midwest Small Animal Association and the A.A.H.A. Regional meeting. Hotel Burlington, Burlington, Iowa, Nov. 12-13, 1958. J. Porter Coble, 2828 S. MacArthur Blvd., Springfield, Ill., secretary.

American Society of Animal Production. Fiftieth anniversary meeting. Sherman Hotel, Chicago, Ill., Nov. 28-29, 1958. Dr. H. H. Stonaker, Colorado State University, Fort Collins, secretary-treasurer.

Nebraska State Veterinary Medical Association. Annual meeting. Hotel Cornhusker, Lincoln, Dec. 3-5, 1958. W. T. Spencer, 1250 North 37th, Lincoln, Neb., secretary-treasurer.

Arizona Veterinary Medical Association. Annual meeting. Yuma Country Club, Yuma, Dec. 7-9, 1958. Robert E. McComb, Jr., Phoenix, program chairman; Thomas E. Lightle, Route 1, Box 817, Yuma, in charge of reservations.

Kentucky Veterinary Medical Association. Winter meeting. Irvin S. Cobb Hotel, Paducah, Ky., Dec. 8-9, 1958. L. S. Shirrell, 545 E. Main St., Frankfort, Ky., secretary-treasurer.

Southern California Veterinary Medical Association. Annual meeting. Beverly Hilton Hotel, Beverly Hills, Jan. 10, 1959. R. J. Schroeder, 1919 Wilshire Blvd., Los Angeles, Calif., program chairman.

Tennessee Veterinary Medical Association. Annual meeting. Noel Hotel, Nashville, Jan. 11-13, 1959. H. W. Hayes, 5009 Clinton Pike, Knoxville, secretary-treasurer.

Intermountain Veterinary Medical Association. Annual convention. Hotel Utah, Salt Lake City, Jan. 22-24, 1958. Douglas R. McKelvie, correspondent.

Oklahoma Veterinary Medical Association. Annual meeting. Mayo Hotel, Tulsa, Jan. 25-27, 1959. M. N. Riemenschneider, 122 State Capitol Bldg., Oklahoma City, secretary.

Minnesota State Veterinary Medical Society. Annual meeting. Leamington Hotel, Minneapolis, Jan. 26-28, 1959. B.S. Pomeroy, University of Minnesota, College of Veterinary Medicine, St. Paul 1, Minn. secretary-treasurer.

Ohio State Veterinary Medical Association. Annual convention. Neil House Hotel, Columbus, Feb. 4-6, 1959.

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Harry C. Sharp, 1411 W. Third Ave., Columbus, Ohio, executive secretary.

Foreign Meetings

International Veterinary Congress. Sixteenth session. Madrid, Spain, May 21-27, 1959. Prof. Pedro Carda A., general secretary, Calle Villanueva 11, Madrid.

U.S. COMMITTEE: Dr. W. A. Hagan, chairman, New York State Veterinary College, Ithaca, N. Y.; Dr. J. G. Hardenbergh, secretary, 600 S. Michigan Ave., Chicago 5, Ill.

Third World Congress on Fertility and Sterility Amsterdam, Holland, June 7-13, 1959. Dr. L. I. Swaab, Sint Agnietenstraat 4, Amsterdam, Holland, honorary secretary.

Regularly Scheduled Meetings

ALABAMA—Central Alabama Veterinary Association, the first Thursday of each month. Dr. G. W. Jones, Main St., Prattville, Ala., secretary-treasurer.

Jefferson County Veterinary Medical Association, the second Thursday of each month. S. A. Price, 213 N. 15th St., Birmingham, secretary.

Mobile-Baldwin Veterinary Medical Association, the third Tuesday of each month. W. David Gross, 771 Holcombe Ave., Mobile, Ala., secretary.

North Alabama Veterinary Medical Association, the second Thursday of November, January, March, May, July, and September, in Decatur, Ala. Ray A. Ashwander, Decatur, Ala., secretary.

North East Alabama Veterinary Medical Association, the second Tuesday of every other month. Leonard J. Hill, P.O. Box 761, Gadsden, Ala., secretary-treasurer.

ARIZONA—Central Arizona Veterinary Medical Association, the second Tuesday of each month. Keith T. Maddy, Phoenix, Ariz., secretary.

Southern Arizona Veterinary Medical Association, the third Wednesday of each month at 7:30 p.m. E. T. Anderson, Rt. 2 Box 697, Tucson, Ariz., secretary.

CALIFORNIA—Alameda-Contra Costa Veterinary Medical Association, the fourth Wednesday of Jan., March, May, June, Aug., Oct., and Nov. Leo Goldston, 3793 Broadway, Oakland 11, Calif., secretary.

Bay Counties Veterinary Medical Association, the second Tuesday of February, April, July, September, and December. Herb Warren, 3004 16 St., San Francisco, Calif., executive secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. R. B. Barsaleau, 2333 E. Mineral King, Visalia, Calif., secretary.

Kern County Veterinary Medical Association, the first Thursday evening of each month. James L. Frederickson, 17 Niles St., Bakersfield, Calif., secretary-treasurer.

Mid-Coast Veterinary Medical Association, the first Thursday of every even month. W. H. Rockey, P. O. Box 121, San Luis Obispo, Calif., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. Lewis J. Campbell, 90 Corral de Tierra, Salinas, Calif., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month at the Hotel Covell, in Modesto, Calif. Lyle A. Baker, Turlock, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. Chester A. Maeda, 766 E. Highland Ave., San Bernardino, Calif., secretary.

Orange County Veterinary Medical Association, the third

Roy Conner Elected President of A.V.E.A.

Roy Conner, veterinary marketing manager for Schering Corporation, Bloomfield, N.J., was elected president of the American Veterinary Exhibitors Association at its annual meeting in Philadephia last month, held in conjunction with A.V.E.A. convention.

Mr. Connor has been secretary-treasurer of the A.V.E.A. and succeeds D. M. Nicholson.

The A.V.E.A. represents all companies who exhibit regularly at veterinary medical associations conventions. The objectives of the organizations are to improve the quality and types of exhibits which commercial companies display at these conventions, to improve relationships with their sponsors, and also to improve the facilities for exhibits.

Correction

Dr. Glen F. Overturf's name was misspelled in the August 1, 1958, issue (p. 34, Washington State graduate applicants). This name was erroneously listed as "Glen F. *Overture*, D.V.M."

AVMA Research Fellowships Available

The Research Council of the AVMA announces the availability of a number of fellowships for postgraduate training for the academic year, 1959-1960.

The recipient of a fellowship must be a veterinarian and a citizen of the United States or Canada. Veterinary students who expect to graduate at the end of the current school year and who wish to follow a career in research may apply for a fellowship.

The latest date for filing the completed application is Feb. 15, 1959. Approximately one month is required for processing completed applications after receipt by the secretary of the Council. Qualified persons should secure and submit applications as early as possible to insure their file being complete for presentation to the Committee on Fellowships.

The Committee on Fellowships of the Research Council will meet in March to consider applications, and the awards will be announced soon afterward. The stipend will be determined in each case by the needs of the individual, the location of the school in which he proposes to work, and other factors. In general, the stipends range from $100 monthly and upward.

Any qualified person interested in graduate training may obtain application blanks and other information by writing to Secretary, AVMA Research Council, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill.

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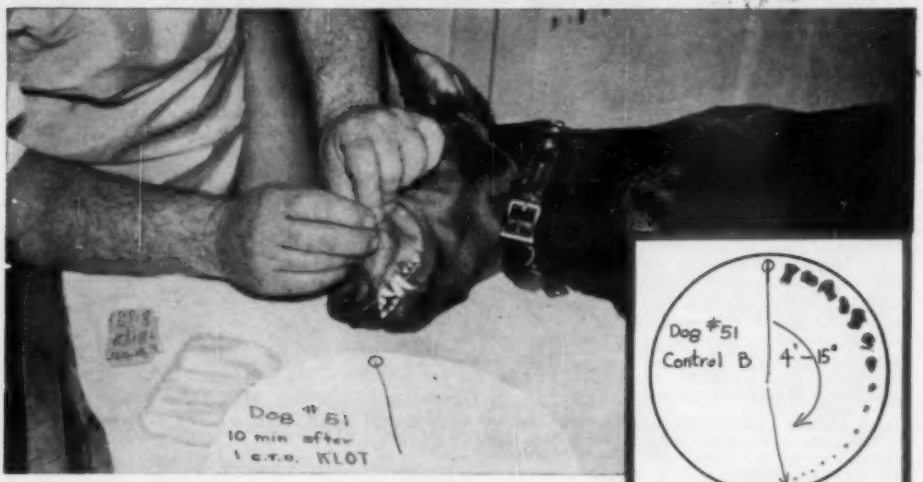
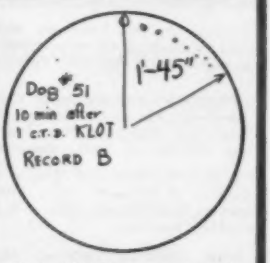


A clinical demonstration. Conditions: Standard lip injury with standard instrument. Wound blotted at 15 second intervals. Klot administered 1cc/10 lb. Identical procedure repeated using opposite lip.

Typical blotting paper record (15 sec. intervals). Bleeding time *without* KLOT — 4 min. 15 sec.



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Peninsula Veterinary Medical Association, the third Monday of each month. R. M. Granfield, 2600 W. El Camino Real, San Mateo, Calif., secretary-treasurer.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. Robert L. Chandler, P.O. Box 8, Ukiah, Calif., secretary.

Sacramento Valley Veterinary Medical Association, the second Wednesday of each month. W. E. Steinmetz, 4227 Freeport Blvd., Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. H. R. Rossoll, 1795 Moore St., San Diego, Calif., secretary.

San Fernando Valley Chapter SCVMA, the second Tuesday of each month at 7:30 p.m., Hody's Restaurant, North Hollywood, Calif. Dr. V. H. Austin, 14931 Oxnard St., Van Nuys, secretary-treasurer.

San Fernando Valley Veterinary Medical Association, the second Friday of each month at the Casa Escobar Restaurant in Studio City. Dr. Rolf Reese, 23815 Ventura Blvd., Calabasas, Calif., secretary.

Santa Clara Valley Veterinary Association, the fourth Tuesday of each month. Kay Beulley, N. Fourth and Gish Rd., San Jose, Calif., secretary.

Southern California Veterinary Medical Association, the last Wednesday of each month. Don Mahan, 1919 Wilshire Blvd., Los Angeles 57, Calif., executive secretary.

Tulare County Veterinary Medical Association, the second Thursday of each month. D. E. Britten, 544 N. Ben Maddox, Visalia, Calif., secretary.

COLORADO—Denver Area Veterinary Society, the fourth Tuesday of every month. Richard C. Tolley, 5060 S. Broadway St., Englewood, Colo., secretary.

Northern Colorado Veterinary Medical Society, the first Monday of each month. M. A. Hammarlund, School of Veterinary Medicine, Colorado A. & M. College, Fort Collins, Colo., secretary.

DELAWARE—New Castle County Veterinary Association, the first Tuesday of each month at 9:00 p.m. in the Hotel Rodney, Wilmington, Del. E. J. Hathaway, Clifton Park Manor, Apt. 73-5, Wilmington 2, Del., secretary.

FLORIDA—Central Florida Veterinary Medical Association, the first Tuesday of each month, time and place specified monthly. Jack H. McElyea, 5925 Edgewater Drive, Orlando, Fla., secretary.

Florida West Coast Veterinary Medical Association, the second Wednesday of each month at the Lighthouse Inn, St. Petersburg. William F. Casler, 2540 30th Ave., N., St. Petersburg, secretary-treasurer.

Jacksonville Veterinary Medical Association, the first Thursday of every month. Dodsons Restaurant, P. S. Roy, 4443 Atlantic Blvd., Jacksonville, Fla., secretary.

Northwest Florida Veterinary Medical Society, third Wednesday of each month, time and place specified monthly. T. R. Geci, 108B Catherine Ave., Pensacola, Fla., secretary.

Palm Beach Veterinary Society, the last Thursday of each month in the county office building at 810 Datura St., West Palm Beach. J. J. McCarthy, 500-25th Street, West Palm Beach, Fla., secretary.

Ridge Veterinary Medical Association, the fourth Thursday of each month in Bartow, Fla. Paul J. Myers, Winter Haven, Fla., secretary.

South Florida Veterinary Society, the third Wednesday of

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Suwannee Valley Veterinary Association, the fourth Tuesday of each month, Hotel Thomas, Gainesville. W. B. Martin, Jr., 3002 N. W. 6th St., Gainesville, Fla., secretary.

Volusia County Veterinary Medical Association, the fourth Thursday of each month. A. E. Hixon, 131 Mary St., Daytona Beach, Fla., secretary.

GEORGIA—Atlanta Veterinary Society, the third Thursday of each month at the Elk's Home, 726 Peachtree St., Atlanta. Donald C. Ford, Forest Park, secretary.

ILLINOIS—Chicago Veterinary Medical Association, the second Tuesday of each month. Charles H. Armstrong, 1021 Davis St., Evanston, secretary.

Eastern Illinois Veterinary Medical Association, the first Thursday of March, June, September, and December. A one-day clinic is held in May. Alfred G. Schiller, Veterinary Clinic, University of Illinois, Urbana, secretary-treasurer.

INDIANA—Central Indiana Veterinary Medical Association, the second Wednesday of each month. Peter Johnson, Jr., 4410 N. Keystone Ave., Indianapolis 5, secretary.

Michiana Veterinary Medical Association, the second Thursday of every month except July and December, at the Hotel LaSalle, South Bend, Ind. J. M. Carter, 3421 S. Main St., Elkhart, Ind., secretary.

Tenth District Veterinary Medical Association, the third Thursday of each month. J. S. Baker, P.O. Box 52, Pendleton, Ind., secretary.

IOWA—Cedar Valley Veterinary Medical Association, the second Monday of each month, except January, July, August, and October in Black's Tea Room, Waterloo, Iowa. A. J. Cotten, Grundy Center, secretary.

Central Iowa Veterinary Medical Association, the third Monday of each month, except June, July, and August, at 6:30 p.m., Breeze House, Ankeny, Iowa. John Herrick, Ames, secretary.

Coon Valley Veterinary Medical Association, the second Wednesday of each month, September through May, at 7:30 p.m., Cobblestone Inn, Storm Lake, Iowa. Robert McCutcheon, Holstein, secretary.

East Central Iowa Association, the second Thursday of each month at 6:30 p.m., usually in Cedar Rapids, Iowa. Dr. J. G. Irwin, Iowa City, secretary.

Fayette County Veterinary Medical Association, the

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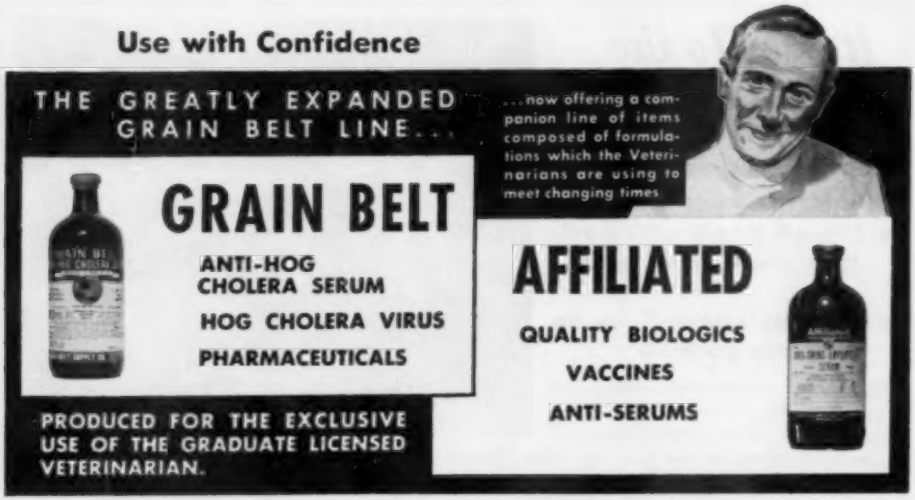
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third Thursday of each month at 6:30 p.m. in West Union, Iowa. H. J. Morgan, West Union, secretary.

Lakes Veterinary Association, the first Tuesday of each month, September through May, at 6:30 p.m., at the Gardson Hotel, Estherville, Iowa. Barry Barnes, Milford, secretary.

North Central Iowa Veterinary Medical Association, the third Thursday of April, at the Warden Hotel, Fort Dodge, Iowa. H. Engelbrecht, P. O. Box 797, Fort Dodge, secretary.

Northeast Iowa-Southern Minnesota Veterinary Association, the first Tuesday of February, May, August, and November at the Winneslick Hotel, Decorah, Iowa, 6:30 p.m. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Northwest Iowa Veterinary Medical Association, the second Tuesday of February, May, September, and December, at the Community Bldg., Sheldon. W. Ver Meer, Hull, secretary.

Southeastern Iowa Veterinary Association, the first Tuesday of each month at Mt. Pleasant, Iowa. Warren Kilpatrick, Mediapolis, secretary.

Southwestern Iowa Veterinary Medical Association, the first Tuesday of April and October, Hotel Chieftain, Council Bluffs, Iowa. J. P. Stream, Creston, secretary.

Upper Iowa Veterinary Medical Association, the third Tuesday of each month at 7:00 p.m., at All Vets Center, Clear Lake, Iowa. Richard Baum, Osage, secretary.

KENTUCKY—Central Kentucky Veterinary Medical Association, the first Wednesday of each month. R. H. Folsom, P.O. Box 323, Danville, Ky., secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday of each month in Louisville or within a radius of 50 miles, except January, May, and July. G. R. Comfort, 2102 Reynolds Lane, Louisville, Ky., secretary-treasurer.

MARYLAND—Baltimore City Veterinary Medical Association, the second Thursday of each month, September through May (except December), at 9:00 p.m., at the Park Plaza Hotel, Charles and Madison St., Baltimore, Md. Norman Herbert, 3506 Joann Drive, Baltimore 7, Md., secretary.

MICHIGAN—Central Michigan Veterinary Medical Association, the first Wednesday of every month at 7 p.m. Frank A. Carter, P.O. Box 78, Carson City, Mich., secretary.

Mid-State Veterinary Medical Association, the fourth Thursday of each month with the exception of November and December. Robert E. Kader, 5034 Armstrong Rd., Lansing 17, Mich., secretary.

Saginaw Valley Veterinary Medical Association, the last Wednesday of each month. S. Correll, Rt. 1, Midland, Mich., secretary.

Southeastern Veterinary Medical Association, the fourth Wednesday of every month, September through May. Gilbert Meyer, 14003 E. Seven Mile Rd., Detroit 5, Mich., secretary.

MISSOURI—Greater St. Louis Veterinary Medical Association, the first Friday of each month (except July and August), at the Coronado Hotel, Lindell Blvd. and Spring Ave., St. Louis, Mo., at 8 p.m. Edwin E. Epstein, 4877 Natural Bridge Ave., St. Louis 15, Mo., secretary.

Kansas City Veterinary Medical Association and Kansas City Small Animal Hospital Association, the third Thursday of each month at the Hotel President, Kansas City, Mo. Frank A. O'Donnell, Parksville, Mo., secretary-treasurer.

NEVADA—Western Nevada Veterinary Society, the first

(*Continued on adv. p. 42*)

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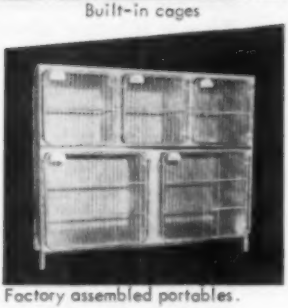

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References: 1. Kakavas, J. C.; Roberts, H. D. B.; de Courcy, S. J. and Ewing, D. L.: J. Am. Vet. M. Ass. 119:203 (Sept.) 1951. 2. Kakavas, J. C.: Antibiotics Annual 1954-1955, New York, Medical Encyclopedia, Inc., 1955, p. 323. 3. Mires, M. H. and Chadwick, R. H.: Vet. News 19:3 (Jan.-Feb.) 1947. 4. Mires, M. H.: J. Am. Vet. M. Ass. 117:49 (July) 1950. 5. Mires, M. H.: Vet. News 14:9 (May-June) 1951. 6. Roberts, H. D. B.; Kakavas, J. C. and Biddle, E. S.: N. Amer. Vet. 34:247 (April) 1953.

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What Is Your Diagnosis?

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Make your diagnosis from the picture below—then turn the page ▸

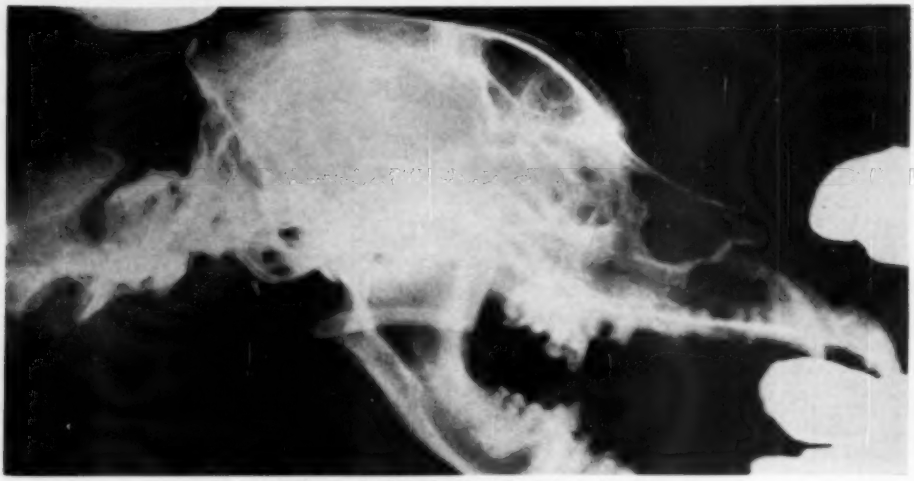

Fig. 1—Radiograph of the head of the Pointer, lateral view.

History.—A male Pointer, 6 years old, had periodic hemorrhages from the right nasal cavity. There was a small, nonsensitive, soft swelling on the face, just anterior to the facial stop and on the right side of the median plane. When palpated, there was little resistance to finger pressure and the skin could be indented into a cavity, indicating a defect in the bone. Three right cervical lymph nodes were firm and enlarged (1.5 cm. diam.). A lateral radiograph of the head was taken.

Here Is the Diagnosis

(Continued from preceding page)

Diagnosis.—A carcinoma of the right maxillary area with osteolysis and metastasis.

Comment.—This radiograph is shown because it is unusual for a tumor of the nasal cavity to be osteolytic without extensive proliferation.

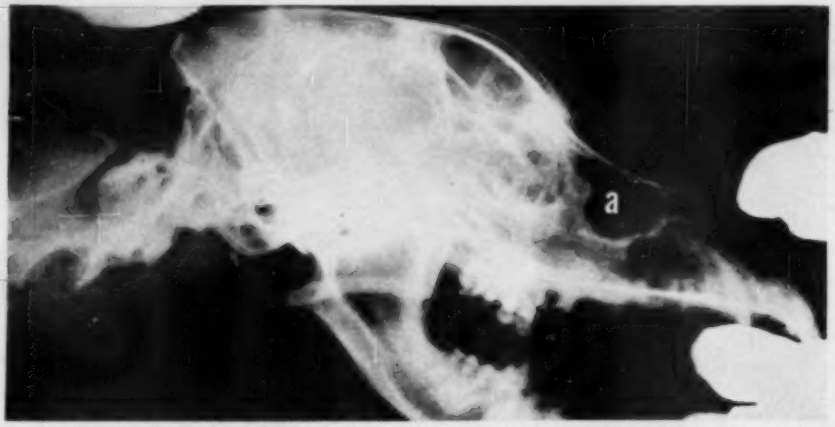

Fig. 2—Lateral radiograph of the head of the Pointer showing an osteolytic cavity in the maxillary area (a).

This case was presented by the Clinical Staff, School of Veterinary Medicine, University of Illinois, Urbana, Ill.

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Tuesday of each month. Paul S. Silva, 1170 Airport Road, Reno, Nev., secretary.

NEW JERSEY—Central New Jersey Veterinary Medical Association, the second Thursday of November, January, March, and May at Old Hights Inn, Hightstown, N. J. David C. Tudor, Cranbury, N. J., secretary.

Metropolitan New Jersey Veterinary Medical Association, the third Wednesday evening of each month from October through April, except December, at the Irvington House, 925 Springfield Ave., Irvington, N.J. Bernard M. Weiner, 787 Clinton Ave., Newark, N.J., secretary.

Northern New Jersey Veterinary Association, the fourth Tuesday of each month at the Elks Club, Hackensack. Burritt Lupton, 569 Franklin Ave., Wyckoff, secretary.

Northwest Jersey Veterinary Society, the third Wednesday of every odd month. G. L. Smith, P.O. Box 938, Trenton, N.J., secretary.

Southern New Jersey Veterinary Medical Association, the fourth Tuesday of each month at the Collingswood Veterinary Hospital, Collingswood. R. M. Sauer, secretary.

NEW MEXICO—Bernalillo County Veterinary Practitioners Association, third Wednesday of each month, Fez Club, Albuquerque, N.M. Jack Ambrose, 3018 N. Rio Grande Blvd., Albuquerque, secretary-treasurer.

NEW YORK—New York City, Inc., Veterinary Medical Association of, the first Wednesday of each month at the New York Academy of Sciences, 2 East 63rd St., New York City. C. E. DeCamp, 43 West 61st St., New York 23, N. Y., secretary.

New York State Veterinary College, Annual conference for veterinarians. Cornell University, Ithaca. W. A. Hagan, New York State Veterinary College, Cornell University, Ithaca, N. Y., dean.

Monroe County Veterinary Medical Association, the first Thursday of even-numbered months except August. Irwin Bircher, 50 University Ave., Rochester, N. Y., secretary.

NORTH CAROLINA—Central Carolina Veterinary Medical Association, the second Wednesday of each month at 7:00 p.m. in the O'Henry Hotel, Greensboro. W. R. Dobbs, Box 869, Albemarle, secretary.

Eastern North Carolina Veterinary Medical Association, the first Friday of each month, time and place specified monthly, Byron H. Brow, Box 453, Goldsboro, N. Car., secretary.

Piedmont Veterinary Medical Association, the last Friday of each month. T. L. James, Box 243, Newton, N. Car., secretary.

Twin Carolinas Veterinary Medical Association, the third Friday of each month at Orange Bowl Restaurant, Rockingham, N. Car., at 7:30 p.m. J. E. Currie, 690 N. Leak St., Southern Pines, N. Car., secretary.

Western North Carolina Veterinary Medical Association, the second Thursday of every month at 7:00 p.m. in the George Vanderbilt Hotel, Asheville, N. Car. Vilu Lind, 346 State St., Marion, N. Car., secretary.

OHIO—Cincinnati Veterinary Medical Association, the third Tuesday of every month at Shuller's Wigwam, 6210 Hamilton Ave., at North Bend Road, G. C. Lewis, Cincinnati, Ohio, secretary-treasurer.

Columbus Academy of Veterinary Medicine, every month, September through May. E. M. Simonson, Columbus, Ohio, secretary-treasurer.

Cuyahoga County Veterinary Medical Association, the

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Dr. Robert Lee Brown (Tex '44) has been appointed to the staff of the Veterinary Medical Department of Schering Corporation, according to a recent announcement made by Robert E. Waterman, vice-president of the company.

Formerly in private practice in Amarillo, Texas, Dr. Brown will assist Dr. J. C. Siegrist (COR '50),

R. L. Brown

director of veterinary medicine, and his staff in carrying out clinical research studies on the company's line of pharmaceuticals. Due to his extensive experience in the cattle industry, Dr. Brown will concentrate on studies of Trilafon, Schering's tranquilizer in cattle.

first Wednesday in September, October, December, February, March, April and May, at 9:00 p.m. at the Carter Hotel, Cleveland, Ohio. F. A. Coy, Cleveland, Ohio, secretary.

Dayton Veterinary Medical Association, the third Tuesday of every month. O. W. Fallang, Dayton, secretary.

Killbuck Valley Veterinary Medical Association, the first Wednesday of alternate months beginning with February. D. J. Kern, Killbuck, Ohio, secretary-treasurer.

Mahoning County Veterinary Medical Association, the third Tuesday of each month, at 9:00 p.m., Youngstown Maennerchor Club, Youngstown, Ohio. Sam Segall, 2935 Glenwood Ave., Youngstown, secretary.

Miami Valley Veterinary Medical Association, the first Wednesday of December, March, June, and September. J. M. Westfall, Greenville, Ohio, secretary-treasurer.

North Central Ohio Veterinary Medical Association, the last Wednesday of each month except during the summer. R. W. McClung, Tiffin, Ohio, secretary-treasurer.

Northwestern Ohio Veterinary Medical Association, the last Wednesday of March and July. C. S. Alvanos, Toledo, Ohio, secretary-treasurer.

Stark County Veterinary Medical Association, the second Tuesday of every month, at McBrides Emerald Lounge, Canton, Ohio. M. L. Willen, 4423 Tuscarawas St., Canton, Ohio, secretary.

Summit County Veterinary Medical Association, the last Tuesday of every month (except June, July, and August), at the Mayflower Hotel, Akron, Ohio. M. L. Scott, Akron, Ohio, secretary-treasurer.

Tri-County Veterinary Medical Association, the fourth Wednesday of January, May, and September. Mrs. R. Slusher, Mason, Ohio, secretary-treasurer.

OKLAHOMA—Oklahoma County Veterinary Medical Association, the second Wednesday of every month, 7:30 p.m., Patrick's Foods Cafe, 1016 N.W. 23rd St., Oklahoma City. Forest H. Stockton, 2716 S.W. 29th St., Oklahoma City, Okla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month in Directors' Parlor of the Brookside State Bank, Tulsa, Okla. Don L. Hohmann, 538 S. Madison St., Tulsa, Okla, secretary.

OREGON—Portland Veterinary Medical Association, the second Tuesday of each month, at 7:30 p.m., Ireland's Restaurant, Lloyds', 718 N.E. 12th Ave., Portland. Donald L. Moyer, 8415 S.E. McLoughlin Blvd., Portland 2, Ore., secretary.

Willamette Veterinary Medical Association, the third Tuesday of each month, except July and August, at the Marion Hotel, Salem. Marvin M. Corff, McMinnville, Ore., secretary.

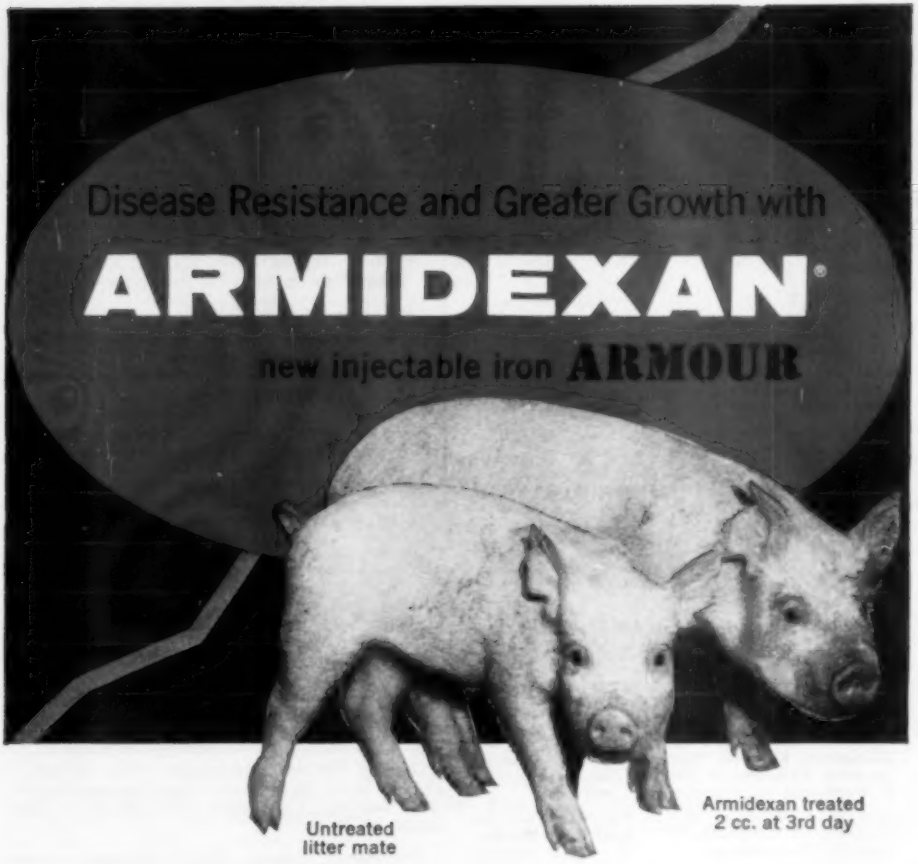
PENNSYLVANIA—Keystone Veterinary Medical Association, the fourth Wednesday of each month at the University of Pennsylvania School of Veterinary Medicine. Raymond C. Snyder, N.E. Corner 47th St. and Hazel Ave., Philadelphia 43, Pa., secretary.

Lehigh Valley Veterinary Medical Association, the first Thursday of each month. Stewart Rockwell, 10th and Chestnut Sts., Emmaus, Pa., secretary.

Pennsylvania Northern Tier Veterinary Medical Association, the third Wednesday of each odd numbered month. R. L. Michel, Troy, Pa., secretary.

SOUTH CAROLINA—Piedmont Veterinary Medical Association, the third Wednesday of each month at the Fairforest Hotel, Union, S. Car. Worth Lanier, York, S. Car., secretary.

TEXAS—Coastal Bend Veterinary Association, the second Wednesday of each month. J. Marvin Prewitt, 4141 Lexington Blvd., Corpus Christi, Texas, secretary.



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VIRGINIA—Central Virginia Veterinarians' Association, the third Thursday of each month at the William Byrd Hotel in Richmond at 8:00 p.m. M. R. Levy, 312 W. Cary Ct., Richmond 20, Va., secretary.

Northern Virginia Veterinary Conference, the second Tuesday of each month. Francis E. Mullen, 1130 S. Main St., Harrisonburg, Va., secretary-treasurer.

Northern Virginia Veterinary Society, the second Wednesday of every third month. Meeting place announced by letter. H. C. Newman, Box 145, Merrifield, secretary.

Southwest Virginia Veterinary Medical Association, the first Thursday of each month. I. D. Wilson, Blackburg, secretary.

WASHINGTON—Seattle Veterinary Medical Association, the third Monday of each month, Magnolia American Legion Hall, 2870 32nd W., Seattle. Roy C. Toole, 10415 Main St., Bellevue, secretary.

South Puget Sound Veterinary Association, the second Thursday of each month except July and August. B. D. Benedictson, 3712 Plummer St., Olympia, Wash., secretary.

WEST VIRGINIA—Kyowva (Ky., Ohio. W. Va.) Veterinary Medical Association, the third Thursday of each month in the Hotel Pritchard, Huntington, W. Va., at 8:30 p.m. Harry J. Fallon, 200 5th St., W. Huntington, W. Va., secretary.

WISCONSIN—Central Wisconsin Veterinary Medical Association, the second Tuesday of each quarter (March, June, Sept., Dec.). D. F. Ludvigson, Ridgeland, Wis., secretary.

Dane County Veterinary Medical Association, the second Thursday of each month. Dr. E. P. Pope, 409 Farley Ave., Madison, Wis., secretary.

Milwaukee Veterinary Medical Association, the third Tuesday of each month, at the Half-Way House, Blue Mound Rd. Dr. R. H. Steinkraus, 7701 N. 59th St., Milwaukee, Wis., secretary.

Northeastern Wisconsin Veterinary Medical Association, the third Wednesday in April. William Madson, 218 E. Washington St., Appleton, Wis., secretary.

Rock Valley Veterinary Medical Association, the first Wednesday of each month. W. E. Lyle, P. O. Box 107, Deerfield, Wis., secretary.

Southeastern Veterinary Medical Association, the third Thursday of each month. John R. Curtis, 419 Cook St., Portage, Wis., secretary.

Wisconsin Valley Veterinary Medical Association, the second Tuesday of every other month. E. S. Scobell, Rt. 2, Wausau, Wis., secretary.

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(Classified ads continued on adv. p. 51)

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REFERENCES. 1. Bull, W. S.: N. Amer. Vet., in press. 2. Henry, R. T., and Blackburn, E. G.: Vet. Med., in press.

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*Jones, S. V.; Bellaff, G. B., and Roberts, H. D. B.: Vet. Med. 51:413 (Sept.) 1956.

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Veterinarian to assist small animal practice; Virginia license required. In letter, state pertinent facts such as age, ability, experience, availability. Bonus arrangement. Address "Box R 38," c/o JOURNAL of the AVMA.

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Graduate (ISC), married, service completed, desires position in Middlewest small animal practice. Will also consider purchase, lease. Address "Box R 29," c/o JOURNAL of the AVMA.

Wanted—Practices

Recent graduate, married, no children, desires to purchase or lease with option to purchase, mixed or small animal practice suitable as one- or two-man practice; will also consider partnership arrangement. All inquiries will be answered and held in strictest confidence. Address "Box R 2," c/o JOURNAL of the AVMA.

For Sale or Lease—Practices

For sale—general practice southeastern Nebraska. Bangs testing available; Nebraska license required. Address "Box R 5," c/o JOURNAL of the AVMA.

Good mixed practice for sale in east central Michigan. Large and small animal hospital, 2-bedroom home. Ill health reason for selling. Purchase price $60,000, includes real estate, equipment, large inventory of drugs, and practice; less than 1/3 down. Address "Box M 45," c/o JOURNAL of the AVMA.

Beautiful 60-cage hospital located in one of Colorado's largest cities on two U.S. Highways. Established practice 25 years; owner has other interests. Small down payment; 15 to 20 years to pay for the right parties. Ideal for a one or two-man setup. Address "Box R 25," c/o JOURNAL of the AVMA.

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(Classified ads continued on adv. p. 52)

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To insure prompt delivery replies should be carefully addressed.

J. R. Stewart, Jr., New Veterinary Sales Manager at Pitman-Moore

The promotion of James R. Stewart, Jr., to the newly created post of veterinary sales manager of Pitman-Moore Company was announced recently by Stewart E. Ruch, vice-president in charge of sales.

Mr. Stewart is a veteran of 20 years with the pharmaceutical firm, having joined Pitman-Moore in 1938 after receiving his B.S. degree in pharmacy from the Indianapolis College of Pharmacy. He was a medical service representative for the firm in St. Louis, Mo., southwestern Indiana, and southwestern Ohio.

James R. Stewart, Jr.

In 1946, after serving with the Navy during World War II, he returned to Indianapolis to become a sales supervisor in the Midwest region.

In 1949, he was promoted to manager of the Southwest region with headquarters in Dallas, Texas, a position he held until he was named to his new post.

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